THE NEW YORK STATE

# Conservationist

August-September 1950

STATE OF NEW YORK, CONSERVATION DEPARTMENT

*Adirondack Diary*, page 22

## THIS SEPTEMBER

*September is the month when Summer goes. We hate to lose the Summer but feel that in the process of its passing, which takes at least a month, there hangs in the air the best of the parting season. And at the same time there creeps into the air the best of the season that's coming, the Fall. If you happen to see it this way, September is both a promise and a remembrance, a rich mixture. We don't know of any other month quite like that.*

*This particular September may be somewhat different. No doubt its general character will be much the same as in other years, but it's hard to feel the warmth of nostalgia or the excitement of a promise except when things are just right; these are delicate feelings, and they can be swamped by more aggressive ones. They can be completely inundated, for example, by the slow, cold wave of fear.*

*Everybody knows that fear is one of the most destructive of all human reactions, and that it's in no way related to a sensible appraisal of danger. But the serious times and events that may produce fear more often produce something almost as destructive—a sort of fundamental doubt. It takes the form of a question that people ask themselves: How important is what I'm doing, in relation to what's going on these days; is it worth it?*

*People who work in conservation are especially apt to ask themselves that question, since so much of their time is spent in providing or maintaining facilities for recreation. Recreation has a rather unimportant sound, these days. But it's an interesting word, worthy of a moment's thought. Recreation: to re-create, to build over again, to make anew. Perhaps, these days, recreation is more important than we know, more important now than ever.*

*Anyway, helping people to make themselves anew is part of our job, and we believe in it. Also, we have a definite feeling about other people in other jobs; if the job was ever worth doing, it's more so now.*

*It may seem that we've strayed a long way from our subject, which was the enjoyment of September. But we don't really think so.*
—Editor

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*THE NEW YORK STATE*
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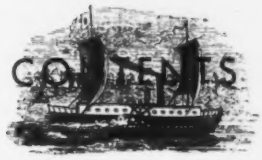


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STATE OF NEW YORK
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PETH is as small as a town can be and still get to be called a town. It doesn't make the road maps. In spite of that it is firmly established in south-central Cattaraugus County, due north of Kill Buck, north northwest of Chipmunk, roughly northeast of the Indian Reservation town of Red House, south of East Otto, west of Humphrey Center. Otherwise, it's half way between Salamanca and Great Valley. But if you can't find it, just ask for Courtney Norton.

The Nortons have been in Peth since 1815, and before that time there wasn't anybody there, nobody permanent at least. But then the big land companies came along, speculators in what was at that time the hinterland, and sold off Cattaraugus County and adjacent territories in large blocks to people who were looking for a place to work out a living, in one way or another, off the land. As elsewhere, everybody had to start out by cutting trees, just to make room for seed, but with the trees out of the way most people settled down on the best bottom land and went to farming, leaving the trees in the places they didn't want to farm. The result is that Cattaraugus County, including the country around Peth, where the Nortons live, looks a good deal like other country where the same pioneer tactics and economics have left their mark: fields and farming in the lowlands, woods on the high hills. Cattaraugus County is still fifty per cent woods.

These woods are not the same as they used to be. Most of the pine and hemlock, which is what the first settlers found, got milled and used on the spot or rafted down the Allegany River. With the softwood gone, all but spots of it, there came in due course of time a crop of hard maple and ash and other hardwoods, including white and red oak, basswood, beech, cherry and yellow birch, which grew straight

***Mr. Norton, and favorite boards***
***The table is pine***
***The two wide boards***
***on the wall are hemlock***
***Between, Mrs. Norton's yellow birch***

# Mr. Norton, his hardwoods

and tall and thick. It still grows that way, if properly handled.

This, including the proper handling, is what interests Mr. Norton. He and his son Ryan are in the hardwoods business.

But Mr. Norton has other interests too. We're not sure if we have this story exactly straight, but it appears that one of the early Nortons was supremely fascinated by steamboats. This all began when he took a trip on one down the Mississippi and liked it so much he decided to sign on; not having any other qualifications to make the crew, he signed on as an MD. But then finally somebody got sick and sent for him, and he was obliged to explain that the MD stood for Mule Driver. That was the end of this Norton's steamboating.

It seems, however, that steamboating seeps into the genes, and is inherited. Anyway, on a quiet day in what the natives sometimes refer to as Pretty Pretty Peth the calm is occasionally interrupted by a toot toot that rings through the valley, and then everybody knows that Courtney Norton is out for a spin on his steamboat.

This is without question the most improbable sight in the State of New York. Mr. Norton had to build not only the steamboat, but a pond to put it on. Both are now in operation. The pond is maybe 500 yards long and 100 wide, and it sits where no pond ought to, high up on the side of a hill. Nevertheless it's there, and so is the steamboat. This incredible craft is a stern-wheeler whose paddle is connected to a monstrous boiler through a system of gears, levers and cables which, along with the boiler and a large bin of fuel for it, occupies most of the space on the ground floor, or deck. Because of this and the hot roar of the boiler, passengers tend to ride on the second floor, or promenade deck, above.

The machine works. Armed with a Jeepful of slabs from the mill, Mr. Norton fills the firebox of the boiler to absolute maximum capacity, dumps in a little kerosene for good measure, and then waits for results. These are indicated on a pressure gauge in which Mr. Norton appears to have complete confidence. When it reads 40 pounds, that's enough; he shouts to his helmsman (who is usually Brian Buckeroo Erikson, one of the innumerable boys that like to do odd jobs around the Norton place) to let 'er go. And off thumps the *Nancee Norton* in a heavy cloud of smoke and steam, chug chug, poop poop on the whistle.

EVIDENTLY, Mr. Norton is a successful lumberman. For this and other reasons, Conservation Department men have followed his operations quite closely, to help him and also to learn from him. In particular Forester Dave Findlay, who works with the Nortons under the Forest Practice Act, has made a careful study of how they do things, and so we felt we were tapping a good

***Part of a 100-acre stand***
***It's hard to believe, but***
***a million feet***
***were cut off this stand***
***only five years ago***

# and his steamboat-

*"The Shack"—where prodigious pancake suppers occur. A product of Norton mind and mill*

*The Nancee Norton under a full head of steam. Fireman Norton on the rail*

*The mill in Peth. Not impressive looking, but it produces in quantity and quality*

*The re-saw takes over after the headsaw has squared the logs*

authority when we asked him what, in his opinion, was the main reason why Courtney Norton had done so well in the lumber business. His answer, which came without any hesitation at all, surprised us; we had expected to hear something about good forestry.

"Mr. Norton treats people right," said Findlay. "Always has."

This was the Forester's verdict. He went on to say that people like to work for the Nortons, in the woods and at the mill; they get good pay and steady employment, and also that sort of warm satisfaction that comes from knowing you're working for good people and a going concern. And loggers like to bring their loads to the Norton mill; they know they'll get a fair scale and a fair price. And when it comes to selling lumber, the Nortons never have any trouble; their mill turns out good stuff, and the price is right.

Findlay summed it up this way: "As fas as I know," he said, "nobody has ever claimed he got a bum deal from the Nortons. Either in the woods or at the mill. If you ask me, that's the main reason why they're right on top today."

THERE are other reasons. One of them is that Courtney Norton was practicing good forestry long before he signed up under the Forest Practice Act, and his woods show it—all 15,000 acres of them. Both Mr. Norton and his son Ryan give a lot of credit for this to Cattaraugus County, which grows good hardwoods naturally, but they are being over modest; you don't have to drive far from Peth to see what other loggers, of the fly-by-night, cut-out-and-get-out school, have done to those same naturally good hardwood stands. And lest it be said that the Nortons, with their large holdings, are among those lucky people who can "afford" to practice good forestry, it's worth noting that Courtney Norton started out with a 200-and-some acre farm, and went on from there.

It's *how* he went on from there that made a good deal of the difference. Take, as just one example, the problem of gaining access to a stand of trees, a real problem for any logger operating in rough country. The Nortons don't just swamp out a road; through their hardwoods they've laid out an extensive system of permanent roads, and they've surfaced many of them not merely with gravel, but washed gravel. As Mr. Norton's son says:

"That costs us a lot of money, but we figure it pays in the long run." And then he adds, "That's the way we try to figure—for the long run."

Judging by the condition of their woods, the Nortons' figuring has been excellent.

And then there is the mill. The mill, of course, houses the end operation in the lumber business, houses the machinery that turns trees into cash, and the Nortons take a healthy and intelligent interest in this department. Although their mill is far from impressive on the outside, inside it there are men and machines that can get the most out of a log, with the least waste. In fact, (unless you count as waste the stuff that's fed to the steamboat which we definitely don't) there's hardly any waste at all; most of the ends and slabs go as fuel into the power unit for the mill.

But the pride of the Nortons is their electric band re-saw, a continuous belt-like blade, mounted vertically, that takes the sticks after the big circular saw ahead of it has squared the logs. Ryan Norton usually presides over the re-saw, sizing up each stick as it comes down the rollers from the headsaw and deciding how it can best be cut, and which customer's order it should go into. Ten thousand board feet come out of the mill everyday, and that doesn't include the baseball bat blanks that are turned out on a special machine when some short ash comes in.

Courtney Norton has quite an eye for boards. He *likes* a good board. There was a time when he used to watch the mill for them, and whenever an especially good one came through he put it aside for a particular project he had in mind. This project, now complete, is what the Nortons call "The Shack". It's a cabin that overlooks the pond and the steamboat, and inside it's panelled with about 30 different kinds of local wood, all in natural finish. Mrs. Norton's favorite board is a fine slice of yellow birch near the fireplace, but Mr. Norton is likely to point out the two hemlock boards on either side of his wife's selection:

"Did you know that hemlock could be finished off like that?"

No, we didn't. But that was just one of the things to be learned from Mr. Norton. We mentioned earlier the pioneer economics of Cattaraugus County, dictated not so much by planning as by topography. In country of this sort—and we have a lot of it in New York—the wooded hills even now rarely contribute what they could, and should, toward a stable economy and a happy community.

Mr. Norton has demonstrated, among other things, that this need not be so. With the *Nancee Norton* floating on the side of one of them, the hills around Peth are in good hands, and Peth is the richer therefor. —P. W. FOSBURGH

# THE COMING DEER SEASONS

IN the central Adirondacks variations in the severity of the winter season have had more influence on the level of the deer population than all other factors. The winters of 1948-49 and 1949-50 were so extremely mild that winter losses were negligible. Had these two winters been average ones, thousands of fawns born in 1948 and 1949 would have died. And, of the second largest group that dies off during the usual winter—old deer—virtually none died of starvation during the past two winters.

Therefore, extra thousands of deer have survived and will be present in this fall's population. In addition there will be the progeny of females born in the spring of 1948, and of old females that would have died had the past two winters been normal. Finally, there will be the unusually large fawn crop of 1950—particularly large because of the unusual survival of breeding females during the past two winters. Of course only about one in five or six of these deer will have legal antlers this fall, but they contribute to an overall central Adirondack deer population which is probably double that which survived the winter of 1947-48.

In the peripheral Adirondack section winter losses even during severe winters are not of great consequence, although there are areas where deer are undernourished. The biggest single factor limiting deer abundance in this section is the illegal deer kill. Don't blame this kill on the lack of game protection, because the average Game Protector works many more than the required number of hours and does a good job. This year round killing, and the illegal killing during the hunting season, is often done by your neighbor, and the fault lies not with inadequate law enforcement but with public indifference to the law.

Jefferson, Oneida and Saratoga counties are in this peripheral section and are examples of the influence of illegal kill. An average of only 36, 106 and 120 legal bucks respectively per year have been taken in these counties during the last nine years, or about one, two and two bucks respectively per year per ten square miles of deer range. If it were not for the heavy illegal kill of does and fawns in these counties, the buck take in a few years would jump to about 250, 600 and 550 buck respectively per year, or one buck per year per square mile of deer range. The illegal deer kill is equally as high in the peripheral areas of Herkimer, Warren, Essex, Franklin and St. Lawrence and over most of Lewis, Oswego, Fulton, Washington and Clinton counties. Because of this, the deer population in this peripheral section has long been virtually the same.

The major reason for the slow increase in the deer population of the Catskill region, as in the peripheral Adirondacks, has been the killing of does and fawns during the buck season and throughout the rest of the year. Here, as elsewhere in the State, the law making jacking an indictable misdemeanor has been tremendously effective—so effective, in fact, that stiffer penalties for other deer violations would seem to be indicated. Meanwhile, the legal hunter can blame those fellows who continue to disregard the law; these people are definitely limiting the sport of the law-abiding hunter.

WE come now to that section in which the Department has been given the power to declare a "hunter's choice" season. In 20 southern tier and western counties, a one-day season of this type will occur this fall at the close of the regular season. In the ten western counties which had such a buck and doe season in 1948, the deer population is almost equal to the level of that year. From the standpoint of available forage on the winter range, that 1948 deer population was too high. The winter range in these counties is neither big enough nor does it contain enough winter deer forage to fill adequately the nutritional requirement of such a large population.

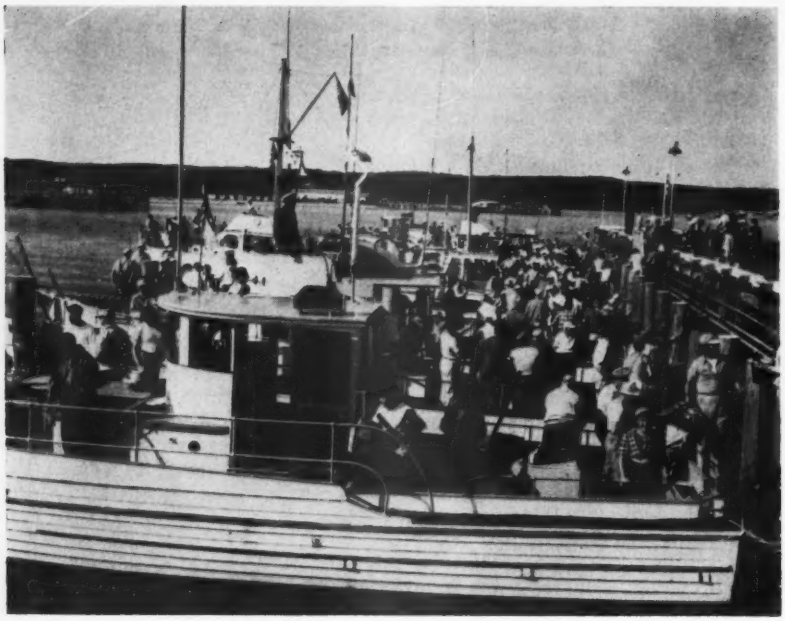
In Broome, Chemung, Chenango, Cortland, Madison, Schuyler, Tioga, Tompkins and Yates counties, this fall's deer population will be at a record high level. The winter deer population of 1948-49 was too great for the amount of winter forage in five of these counties. During that winter in Broome, Chenango, Cortland and Madison counties the forage was barely adequate to furnish full nutrition for the population in the better deer wintering areas. Since the winter of 1948-49 the fawn crops of 1949 and 1950 have been added. This summer a comparison of field observations on over-utilized browse species in certain counties with the deer take per square mile of deer range has shown that the deer population in the better deer areas is consuming as much, and in many areas more, winter forage than is annually grown. In many areas examination of the winter forage shows that many species of valuable timber have been so consistently over-browsed that none have escaped above the browse line in from three to eight years.

Cayuga, Monroe, Onondaga, Orleans, Seneca, Wayne, Niagara and Genesee counties have the lowest percentage of deer range of any in the western region. In these counties, the low legal take per square mile of deer range, even after many years of the buck law, reflects two conditions: deer do not find a fully satisfactory home in them, and the illegal kill is so large as to prevent the normal rapid growth of the herd. A growing deer population is not wanted in these counties because of the large amount of agricultural land. If this population were allowed to grow, agricultural damage would be more intense at a lower deer population than elsewhere because the non-agricultural land is broken into blocks smaller than the general home range of a deer. These counties are therefore included in the western "hunter's choice" season this fall—to prevent the further growth of the deer population and a consequent increase in deer damage to crops.

NO matter how individuals look at the necessary shift from buck law to "hunter's choice" seasons, there is one thing all must remember—with faithful observance of the legal season and the buck law, a deer population will increase, and if "hunter's choice" seasons are not inaugurated, deer will eat themselves out of house and home. Today the western region, the Catskill region and the central Adirondacks have a deer population equal to or in excess of that which the winter range can provide with adequate nutrition. In areas where the above is not true, the illegal deer killer prevents a population increase.

—C. W. SEVERINGHAUS, *Leader, P-R Deer Mgt. Research Project*

**DEER hunting prospects for the fall of 1950 will be better in the Adirondacks than they have ever been in any recent time. In the Catskills there should be a general increase in the deer population, but some counties will show an improvement, others a little decrease. In the western counties, where bucks and does were legal in 1948, the population is almost equal to that of 1948, while the other counties probably contain a record high deer population.**



***AT THE START***
***Party boats loading up for the big event***

# *Fishermen's Special*

**IT'S CHEAP, IT'S FUN, AND YOU BRING HOME THE BACON. BUT YOU HAVE TO SEE IT TO BELIEVE IT**

IT'S a pretty safe bet that even on a radio quiz show, nine contestants out of ten would have at least a vague idea that Montauk is the last stop east in New York State, sticking its rocky nose into the Atlantic Ocean some 120 miles out of New York City. But after giving away a chrome-plated Cadillac for that answer, the quizmaster would draw a blank from the same nine out of ten with the next question: What is the Fishermen's Special? The answers to this—(1) A fluted mother-of-pearl spoon with electronic hook disgorger, (2) A toddy for cold mornings made with Dupont's varnish remover—are not only wrong but a shame.

Let us hasten to put them right. The Fishermen's Special is a brain child, a unique institution and a train all in one. It is designed, and sucessfully, to bridge the 120-mile gap between the fish infested tides swirling around Montauk Point and the fishermen infested streets of New York City and vicinity. As a brain child it was the inspiration of some unheralded railroader—probably the vice president in charge of fishing—back in the mid-thirties when the Long Island Line was an unwanted child of the mighty Pennsylvania.

As a unique institution it is, so far as we know, the only regularly scheduled train to haul so many fishermen such a great distance to catch so many fish over so long a period of years.

As with everything, changes have occurred. There was a gap during the war years when, for obvious reasons, the "Special" was dropped. The round trip fare from New York's Penn Station to Montauk was $2 before the war. It's now $3. In pre-war days it took a 20-car train to accommodate the average mob of over 1,000 "mad-hatter" anglers who swamped the platform every Wednesday, Thursday, Saturday and Sunday. Now, five cars handle the 300 to 350 passengers who make the junket on Saturdays and Sundays only. In the early years a few lessons in adagio dancing plus football experience in blocking, the quick pivot and broken, downfield running were essential if you made it without broken bones through the Long Island waiting room of the Penn Station at 4:30 A.M., just before train time. Now any veteran of the New York subway system can hold his own.

In the old days, as the "Special" slowed to a stop at the Railroad Dock at Montauk, the car doors and steps were used only by amateurs and the aged, while the "regulars" crawled, fell and leaped from the open windows. Now they still hit the platform running but they all use the car doors. Back then all the party boat skippers tied up at the Railroad Dock (the only stop at Montauk in those days) and there braced themselves against the desperate charge of anglers, all racing for the preferred stern positions. Now, with the crowd about a third of what it was in pre-war days, the load is divided, some taking off from the Railroad Dock while the rest rides a few hundred yards farther to the end of the line, there to plunge from the train into the hands of the newest and perhaps the most efficient, slicked-up and modern fishermen-handling organization on Long Island—"Fishshangri-La". This set-up is the inspiration of one Jean Gobels, Gobels Aircraft Corporation, who looked for and found something constructive to do with a lot of first class dock facilities and several dock-side buildings purchased from the U. S. Navy after the war. A total of 12 party boats, most of them 50-footers with a 12 to 14-foot beam, operate from the "Fishshangri-La" dock, making up the bulk of the Montauk party boat fleet. The skippers, who somehow manage to combine experience, fish sense, navigational know-how and affability, supply the last link between fishermen and fish at $4 per head (fisherman head that is). They also supply the bait. Or, if you are in the chips you can do it de luxe with a party of six, aboard one of the several charter boats operating from the same dock at a rate of $50 and up per day, tackle and bait supplied.

With boats loaded (20 to 30 anglers per boat, dependent upon size of boat and individual size of fishermen) the fleet gets under way about 8:30 a.m. for the hour to hour and a half run to the fishing grounds off Montauk Point.

Once around the Point the fleet fans out and you may wind up over any one of several grounds, depending on where the fish are running best at the time. It may be Inner Frisby, Outer Frisby, Great Eastern, Black Mark, Shagwong Reef, Cerberus Shoals, Cartwrights or even Southwest Ledge off Block Island. On location, the skipper cuts the motor and the drift begins. This is the signal for all hands to bait up and unlimber the most fearsome assortment of tackle the author has ever witnessed in one collection. Rods range from light casting outfits to two-inch butt diameter booms which could stop a blue marlin in its tracks. The line is anyone's choice, but a popular variety is sold indiscriminately to party boat fishermen and cow pokes on the Western Range. Reels, too, vary from simple wooden spool winches to huge, multiple geared, star-drag creations commonly seen in the foreground of photographs of 350-pound swordfish, over the caption, "Brought to gaff by J. Rascob Asterbilt in 32 minutes, 9 seconds".

AND the business ends of the lines would give Rube Goldberg a headache. The only uniformly used item is a ten-ounce lead sinker (and it's needed to get down through these fast running Montauk currents and tides). From there on the field is wide open to a bewildering assortment of hook spreaders, rotators, spring tension jigglers and you-name-its.

But what's the odds? The fish swarm over these grounds and bite wildly, undaunted by the weirdest assortment of hardware.

What's to catch? Well, it depends on when you are there. Early in the season pollack and cod are running, individual fish often hitting the 25-pound mark. Before they have all moved to more northerly waters, the sea bass are on deck, then porgies and fluke. Mixed in will be an occasional winter flounder, hake or mackerel. But you can't miss.

***THEY'RE OFF!***
***The race to the best grounds gets under way***

When you go fishing off Montauk you will get fish and sometimes more than you know what to do with. For instance, on a recent trip down on the "Special" and off Montauk over Outer Frisby's aboard the good ship "Anona", Captain George Moore at the wheel, one bug-eyed angler had no more than hit bottom with his bait before he had something—but heavy. Some energetic reeling, rod straining and resting and the obliging beast finally surfaced not six feet off—a blue shark; in fact about four and a half feet of blue shark. Irked by boat and occupants he sheared off two hooks, lead and line with a snap of the jaws and swam lazily off. By this time everyone aboard was hauling in sea bass running from two to four and one-half pounds. The average catch by 4 p.m. (time for the return trip to Montauk) ran about 20 pounds per man. As the catch averages out about the same, boat for boat, the total day's catch by all hands ran around 6,600 pounds and when you figure 42 "Fishermen's Special" days during the season, it adds up to roughly 300,000 pounds of fish, accounted for primarily by the party boat fleet. To this must be added the charter boat catch. How's fishing out your way?

***THE FINISH***
***The winners (everybody wins) prepare the day's take for the trip back on the Special***

SUPPOSING you don't catch a fish, (something that hasn't happened yet, to our knowledge!). Have you wasted your time and money? Definitely not! Where else can you travel 240 miles to and from fishing for .0125 cents per mile? That's what the $3 "Fishermen's Special" round trip fare figures out to. Where else can you see and talk to so many fishermen of so many nationalities on the same train? Where else can you get a full day aboard a sturdy cruiser, in the freshest of air and on the bluest of seas for four dollars? Anyway, don't try to tell the regulars on the "Special" that there is a better bargain; they've been around and wouldn't believe you. Most of them are as completely sold as the long distance truck driver to whom we talked on our last trip. He had pushed a big diesel tractor-trailer outfit from Uniontown, Pa. to New York (driving time, 13¼ hours, distance 411 miles) and made it just in time to rush over to catch the "Special" at 5:10 a.m.

Well, want to go? All you need is a yen to go fishing, a whole day, and about $10 to spare, plus most anything in the nature of a rod, reel and line. Oh yes, a bag to put your fish in. It will help, too, if you bring along that spare set of sea legs; a little wind combined with the usual ground swell and the strong tides off Montauk can do things with a boat that would be the envy of a troupe of hula dancers.

It's all yours as a passenger on the "Fishermen's Special."

—AL BROMLEY

***Arrow in picture at left indicates highway marker on Route 9: "Entering Adirondack State Park". The same highway marker appears above. Notice how sign boards extend right up to the boundary of the Park, and what a difference their absence makes beyond***

# SIGNBOARDS

THE tourist as he wends his way along Route 9 from Albany to Lake George, through what one of our popular writers has termed the "Avenue of Billboards", arrives at a point approximately one-half a mile north of the old Half Way House where he suddenly becomes aware of the natural beauty of his surroundings. His view of the countryside is no longer shut off by a maze of signboards and he gets his first unobstructed view of New York's unexcelled playground. He may fail to note the small highway marker advising him that he is now entering the Adirondack Park, but nevertheless he is suddenly conscious of having entered into a land of great and relatively undisturbed beauty.

Those more familiar with the history of the Adirondack Park know that this change in scenery is not just a coincidence, but rather the result of a special law governing the erection of signs within the Adirondack Park. (Apparently for want of local interest, the law was not written to include the Catskill Park.) Prior to the enactment of this statute, signboards cluttered the landscape throughout the entire Adirondack area. But the provisions of this statute and the splendid co-operation of local residents have saved much of the natural beauty of the Adirondacks from desecration by man-made advertising devices.

Although the law restricting the use of signs within the Adirondack Park has been in effect since 1924, each year the Department receives numerous violation reports from its field personnel. An analysis of these reports reveals very few *willful* violations but does indicate a lack of a thorough knowledge of the law and its application on the part of the public. It is hoped that the following explanation will clarify some of the questionable points.

Section 62 of the Conservation Law, restricting the erection and maintenance of signs within the Adirondack Park, reads as follows: "In order to conserve the natural beauty of the Adirondack park and to preserve and regulate the said park for public uses for the resort of the public for recreation, pleasure, air, light and enjoyment and to keep it open, safe, clean and in good order for the welfare of society, no person shall erect or maintain within the boundaries thereof any advertising sign or advertising structures or devices of any kind, except under written permit from the department. The provisions of this section shall not apply to signs erected or maintained upon property in connection with a business conducted thereon, or within the limits of an incorporated village."

It is clear from a reading of this section of the Conservation Law that a permit must be obtained from the Conservation Department in order to erect or maintain an advertising sign or structure within the Adirondack Park (defined under paragraph 2 of Section 63 of the Conservation Law) except on property in connection with the business or within the limits of an incorporated village. However, such a casual interpretation might lead one to believe that the Conservation Department could, upon request, grant a permit to any applicant to erect an advertising sign at any location within the Adirondack Park. Such is not the case; the Department must, before granting permits, give due consideration to the *intent* of the law.

A more careful study of the law reveals a very plain statement of intent, namely: "In order to conserve the natural beauty of the Adirondack Park and to preserve and regulate the said park for public uses for the resort of the public for recreation, pleasure, air, light and enjoyment and to keep it open, safe, clean and in good order for the welfare of the public. . ."

IN view of such a statement, the Department has taken the stand that the indiscriminate granting of sign permits would violate the intent of the law, and it has therefore refrained from granting permits for purely advertising purposes. It has, however, recognized the need for a limited number of directional signs for places of business located off the main numbered highway routes. And it has granted permits to applicants to erect standard signs at intersections of main numbered routes and secondary roads, when in the opinion of the District Forester such signs were needed for directional purposes. ("Standard" signs

*The law does not apply in the Catskill Park*

*Approved type of sign*

# IN THE ADIRONDACK PARK

may be either two and one-half by four feet, or eight by 30 inches; see below.)

Such a policy was followed by the Department, when granting permits, from the time of the enactment of the law up to 1950. But a substantial increase in requests for permits during the spring of that year called attention to the need for a more definite statement of policy to govern the granting of permits, and so, on July 1 of this year, the following statement was issued by the Department for the guidance of District Foresters:

*Permits for the erection and maintenance of signs within the Adirondack Park will be granted by District Foresters who in turn will be governed by the following rules:*

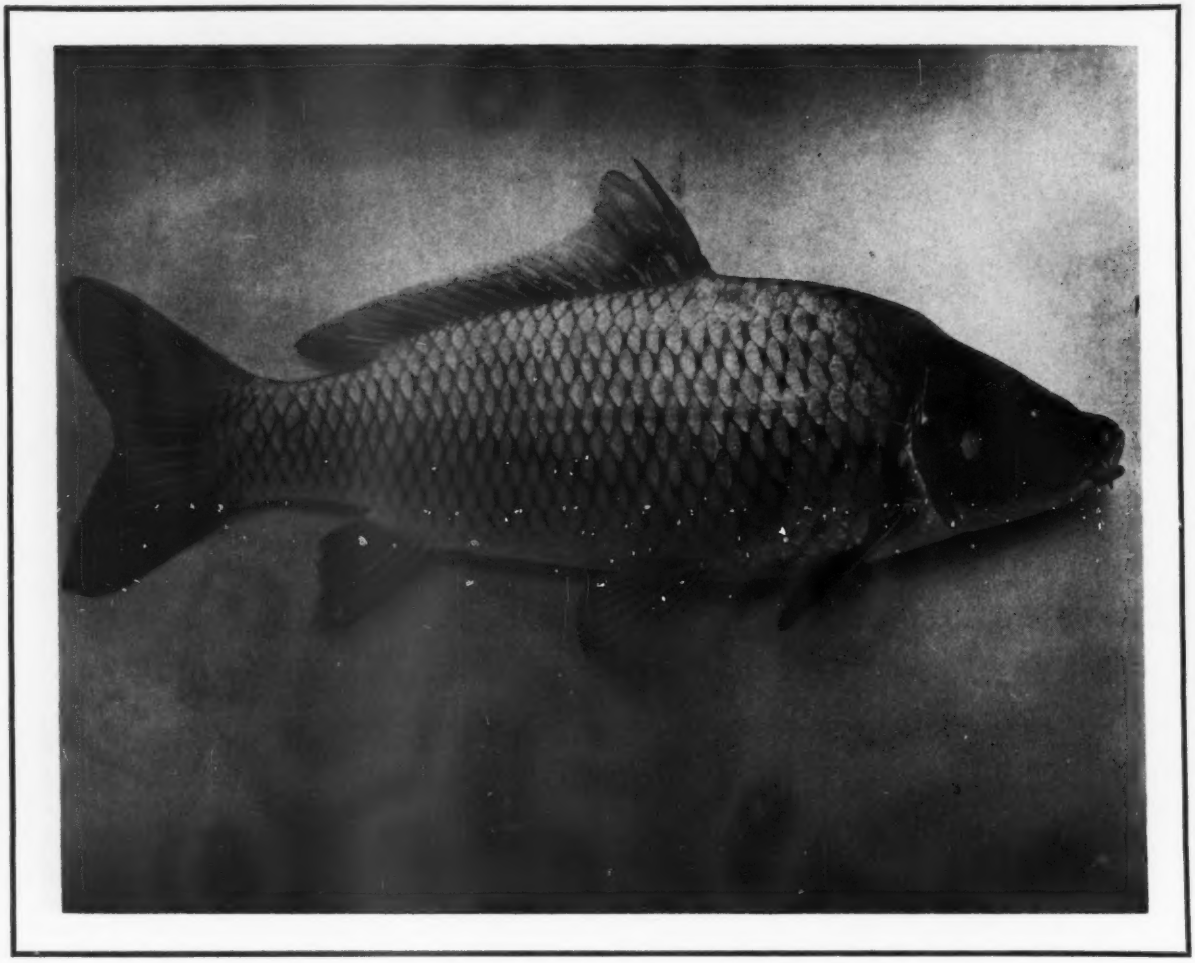
1. *No permits may be granted for the erection or maintenance of advertising signs between road intersections or at intersections of numbered highway routes.*
2. *A revocable permit may be granted to erect and maintain a standard 2½′ x 4′ or 8″ x 30″ sign at the intersection of unnumbered highways and private or unnumbered roads when in the opinion of the District Forester such a sign is needed for directional purposes.*
3. *A revocable permit may be granted to erect and maintain a standard 8″ x 30″ sign at the junction of unnumbered highways when in the opinion of the District Forester such signs are needed for directional purposes.*
4. *A revocable permit may be granted to a local Chamber of Commerce or to a town officer of an unincorporated village to erect and maintain a standard 2½′ x 4′ sign on the outskirts of the village—the wording on the sign to be restricted to the name of the village and not over three additional words of descriptive matter.*
5. *When it appears that more than one individual may make application for a permit to erect a sign at any approved location, the District Forester shall determine the number of individuals desiring such signs and a joint revocable permit may be granted to erect a combination sign with the names, or the names of the places of business, of all such joint permittees on a single standard. The design and wording of such sign to be approved by the District Forester.*
6. *The wording upon any sign may include the name of the permittee or the name under which he conducts his business. In addition, when the character of the permittee's business cannot be fairly inferred from the name to be used upon the sign, not to exceed three additional words as to the nature of the business may be included. In such cases, no words may be employed on the sign which in the opinion of the District Forester are unnecessary or superfluous or which are descriptive rather than informative.*
7. *The color of all signs shall be standard, with brown background and yellow letters. Luminous paint may be used on the letters.*

The liberalized policy outlined above permits the use of three words relating to the nature of the business in addition to the name of the owner or place of business. On the other hand, it requires that all signs erected conform to standard specifications approved by the Department.

It is hoped that this policy will promote uniformity in the administration of the law and will result in the standardization of signs throughout the Adirondack Park. It is appreciated that it would be unjust to require present permittees to meet these standards immediately, but as signs are renewed, permittees will be required to conform to these rules.

THE standard sign approved by the Department for use in the Adirondack Park is of a rustic design which blends into the forest background but is sufficiently conspicuous to be readily seen. Signs of this type (see photograph above) are used to designate campsites and other facilities operated by this Department. A print of the approved standard signs may be obtained from the local District Forester, or by writing direct to the Division of Lands and Forests, Conservation Department, Albany, New York.

—W. M. Foss,
*Asst. Director, Lands & Forests*



# THE CARP

## ONE MAN'S MEAT IS ANOTHER MAN'S POISON

THE angler and biologist have a simple way of determining whether or not any body of water needs improvement: only when angling success declines is there a need for action. The usual method chosen for the improvement of this type of situation in the old days was the introduction of more fish, bigger fish or new species of fish, and it was in the execution of this "policy" that the "German" carp was introduced into American waters—a momentous occasion.

The term "German" is in quotations because the carp isn't really German; he's Chinese. The ancient Chinese raised this fish long before it was introduced into Europe sometime previous to the Fourteenth Century A.D., but once introduced, carp and carp culture took a real hold on Europe. In this connection, it should be kept in mind that the European peoples were interested in fish as an item of food. Fishing as a sport was evidently enjoyed only by the richer noblemen, and there was no large scale public participation in recreational fishing such as exists in this country today.

Many Germans, particularly, became very enthusiastic about carp culture and write glowing accounts on the subject. An example of this enthusiasm may be found in an excerpt of an article written by Max von Dem Borne of the German Fishery Association. He states in part:

"Even independent of pond culture, carp raising may reach a much higher degree of perfection than it possesses at present. The main points are to introduce great masses of young carp in our rivers, stock with young carp our numerous German lakes, . . . (and) make even small ponds and marl-pits sources of revenue by stocking them with young carp." Herr von Dem Borne then goes on to describe in detail how "every owner of ground" can raise carp in "small easily constructed ponds."

IN the 1880's commercial fishermen and governmental authorities in this country became interested in supplementing what was then considered a drastic decline in the numbers of fresh-water food fishes. The carp, with the build-up given it by European fish culturists, was chosen to augment our natural supply of food fish. Carp had been introduced sporadically and on a small scale during the early part of the century, but it was not until 1876 that a real program took effect. These were the days of P. T. Barnum and everything was done on a "colossal" or "stupendous" scale. So it was with the introduction of carp.

On the 26th day of May, 1876, a shipment of 345 carp arrived in this country under the supervision of the U. S. Fish Commission. These fish were placed in the previously constructed breeding ponds of Druid Hill Park in Baltimore, Md., and the following year some of these fish were shipped to Washington, D. C.

*All the carp in United States waters today have sprung from this initial stock.* The carp in the Baltimore and Washington ponds multiplied so rapidly that in 1879, when the first distribution was made, 10,946 fish were shipped to various parts of the country. By 1880, 50,000 carp had been distributed, and within a few years fish by the hundreds of thousands were being sent out annually.

A very efficient scheme was hit upon to promote a large demand for these carp. They were shipped according to congressional districts, and any Congressman wishing to nail down a few votes merely handed out a few carp. Needless to say the desire for carp was stimulated and to take care of the ensuing distribution load, special railway refrigeration cars were employed. These cars took carp to pre-arranged points where the fish were repacked in smaller containers and expressed to their final destination.

*New York State's share of the original 1879 shipment* was 193 carp. What vast problems can grow from such simple beginnings!

Carp found their way into our natural waters through the failure to properly construct carp rearing ponds; broken dams and leakage released both immature and adult fish. In addition, it seems probable that many were purposely stocked in ponds and rivers to afford "better fishing." Sportsmen, however, showed little enthusiasm for carp, and this attitude has become more and more positive as the carp themselves have become more and more numerous.

This adverse popularity led to the spreading of many questionable tales concerning carp and their habits. More than one story has been circulated about finding adult carp in a pond that has been previously drained dry for many months, the assumption being that the carp burrowed into the bottom and remained alive for months in the dry pond bed. Carp are extremely adaptable, but few fish other than the lung fishes have ever been known to remain alive under such adverse conditions. (Attributing these powers to carp may possibly be traced to their habit of spending the winter months in a state of "hibernation." During this time they remain dormant at the lake or stream bottom, sometimes partially or wholly buried in the mud. With the advent of spring they "revive" and migrate to shallow water to spawn.

Other stories have likened the carp to a vacuum cleaner that systematically sucks up everything from the bottom of lake and stream. He is also reported to feed on vegetation alone; others say that he follows spawning fish, gorging himself on the freshly shed eggs. The eating of the young of other fish has likewise been attributed to the carp.

In short, the accusations levelled against this fish, if added together, would suggest that he is just about the worst under-water pirate we have. Some of the accusations are just, some are not, some only partially so. The true story of the carp's habits, gustatory and otherwise, is as follows:

A five-year study of carp feeding habits during the N. Y. S. Biological Survey showed that animal food was preferred by carp. This food consisted mainly of crustaceans, (small, sometimes minute, shrimp-like organisms), insect larvae, and mollusks, (snails and mussels). The survey and other reliable sources indicate that carp also take in a lot of vegetable matter. But no fish eggs were found in an examination of the stomachs of over 600 central New York carp, and these same stomach analyses proved that carp rarely if ever eat other fish for food.

WHERE numerous, carp have considerable effect upon the habitat and its capacity to produce other species of fish. The food organisms consumed by carp obviously cannot be eaten by game fish. Furthermore, when carp de-

stroy plant growth, they are decreasing the potential invertebrate food organisms—as such organisms depend on aquatic vegetation for shelter and food.

It has also been pointed out recently by the U. S. Fish and Wildlife Service that carp may have an undesirable effect on duck populations. In some western and mid-western areas, carp destroyed large quantities of vegetation utilized by waterfowl! They not only destroyed the plants, but kept the water too turbid for the germination of seeds. In consequence, large-scale carp removal was required to maintain a desirable aquatic plant growth.

IN the face of these indictments one may ask, "Well what good is there in carp?" The answer is simple. They are good to eat. Carp were introduced as a food fish and have served this purpose well. Like many other exotics, however, they have proven to be too adaptable and have worn out their welcome. But smoked carp is delicious (see smoked carp recipe in April-May, 1950 issue), and the cooking of carp for the table is also a long established art. For those who wish a time tested recipe, the following is suggested:

**Chinese Carp**

1 Carp (3-5 lbs. ought to do)
¼ cup cooking oil
Salt and pepper to taste
2 tablespoons sugar
4 teaspoons cornstarch
½ teaspoon paprika pepper
½ teaspoon salt
Dash of onion or garlic salt
4 tablespoons vinegar
¼ teaspoon soy sauce
2 cups water
½ lemon thinly sliced

*Clean and skin fish, cut in serving size pieces and simmer in a covered pan in the oil until done (about 10-15 minutes). Add salt and pepper to taste. Mix sugar, cornstarch, salt, paprika, pepper and onion salt. Add vinegar, soy sauce and water, and cook over low heat until thickened, stirring constantly. Add lemon slices and simmer five minutes longer. Pour over fish. Garnish with watercress if desired. Serves 6-8.*

Carp are sold the year around at the Fulton Fish Market in New York City. The demand is greatest in the fall, and at this time they bring the highest price. Most carp coming to the market are fish recently seined from some lake or stream, but a few carp seiners take fish during the spring and summer spawning season and hold them until fall in ponds. They are thus able to take fish at the time of year when they are easiest to catch, and still "cash in" on the higher fall prices.

If you don't care to buy carp or can't buy them locally, they are readily available in some nearby lake or river. The best way to catch them is to bait an area that is known to be frequented by them. Corn, oats or almost any kind of grain will do the trick. Then fish at night, using night-crawlers, boiled potato, bread balls or just about anything that's handy for bait. If a fly rod is used, catching carp can be great sport. Spearing them at night (with the aid of a boat and lantern) also affords lively recreation, but the Department's spearing order should be consulted as to waters open to spearing.

Sportsmen and fisheries biologists have long lamented the huge carp populations in many of our natural waters. Many control measures have been tried, many more proposed. Netting was one of the earliest control methods used, but it has since been found that although netting will give some degree of control, it is not permanent. Minnesota's Department of Conservation found that the removal from 14 "rough fish lakes" of 97 pounds of rough fish per acre (mostly carp) had no permanent effect on reducing the numbers of these fish. The only benefit one can expect from removal of fish by netting, then, is temporary, and probably the best argument favoring the seining of carp is that it provides a means of harvesting a good food fish and at the same time may favor existing game fish populations. Many game fish, however, feed extensively on young carp.

The destruction of carp spawning grounds has been proposed as another means of control. This method has been used to control panfish populations in Illinois, where spawning sites were repeatedly trampled and dragged so that no young were produced. Chemical treatment of spawning grounds has also been tried, but good results seem to be possible only in smaller bodies of water. In larger lakes and streams it just isn't possible to destroy enough eggs and young to compensate for the huge reproductive capacities of those that remain. The dredging of shallows has also been attempted, but with similar results. Furthermore, such habitat destruction may also affect other game fishes such as bass.

ANOTHER scheme for controlling obnoxious fishes which may be applied is the planting of predatory fishes on the spawning beds. A fore-runner of this idea was the practice by German carp culturists of placing adult northern pike in the carp ponds to eat any young carp produced and to keep the adult carp moving. Bass fingerlings have been planted in some mid-western lakes to control pan fish. The results of these plantings are not entirely evident as yet, but it is doubtful if fry or fingerling plantings could be expected to eat up all the young carp produced; early spawned carp would be too large to eat and undoubtedly some of the later spawned carp would escape. Then there would be the problem of determining the number of bass to stock.

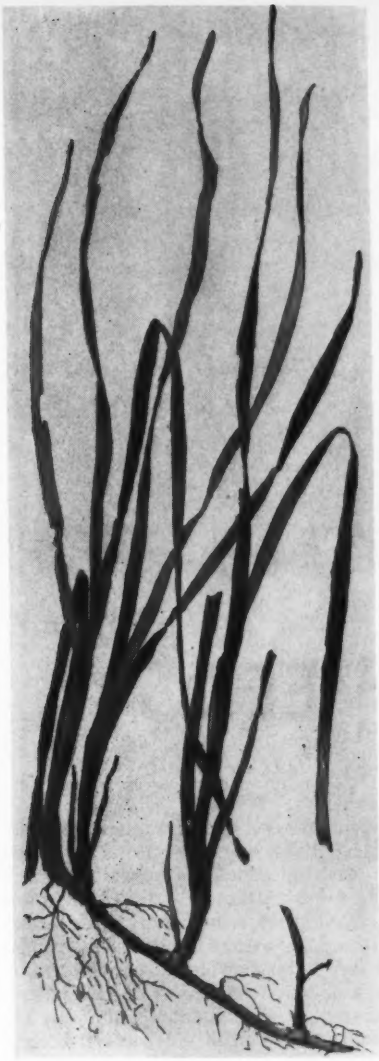
The most thorough method known for the eradication of an entire population of fish is the use of rotenone or other substances toxic to fish. This is still in its experimental stages, and 100 per cent kills are not always achieved. Although the most satisfactory method of destroying unwanted fishes in waters small enough to treat effectively, the cost of poisoning a large body of water —or all carp infested waters—is prohibitive. Also, infiltration from other nearby waters, or careless reinoculation, is a constant danger that would make it necessary to retreat the waters periodically. In fact reinfestation of carp is a constant threat to *all* programs aiming at complete eradication.

FROM the foregoing it is seen that the complete eradication of carp from our lakes and streams would be an immense, if not futile undertaking. Until a fool-proof program can be evolved (and this seems a doubtful eventuality), we will have to live with carp and like it—or at least make the best of the situation. A sensible point of view would seem to be based on two considerations: (1) Carp are good to eat, and we've got lots of them. (2) If we snub them and harvest only our game fish, we may be doing a great disservice to our game fish—because a given body of water will support only a given poundage of fish, be they carp or bass. In other words, if much of the space and food in a stream or lake is taken up by a fish which is not harvested and utilized, there is less space and food for game fishes. It is for this reason that in some cases, carp control as just one kind of fish population control, is advisable. As with other fish problems this calls for the diagnosis of individual waters.

We might also consider the following: When this country was in the process of trying to find control measures for carp, a representative of a South American country was sent here to obtain carp—and instructions on how to rear them—so they could be introduced in Latin-American waters. In spite of repeated warnings on the part of our authorities, carp were subsequently stocked in South America.

All of which goes to prove that one man's meat is another man's poison.

—JOHN S. GRIM, *Aquatic Biologist*



# *flora* eel grass

SALT water eel grass (*Zostera marina*), also known as sea weed, ribbon grass, crabgrass, sea-oar, sea grass, salt water grass, brant grass, tiresome weed, sea moss, duck weed, grass wrack, sea wrack, etc., is the common seed plant found in this State in the waters along the south shore of Long Island, east of Babylon, and in one location along the north shore.

As the common names imply, eel grass is an aquatic plant of salt and tidewater areas, with long, bright green ribbon-like leaves. Its former distribution extended from tidal flats out to a water depth of nine to ten feet. The growth was very luxuriant; the leaves of the plants would spread out on top of the water even at extreme depths, and in many places the bays were completely covered.

But during the summer and fall of 1931 more than 90 per cent of the eel grass plants died. In many areas where it was so abundant as to impede boat travel, the plants died off in a single season, and in these areas only one per cent of the original plants were alive in 1932. This die-off was the most destructive on record. It occurred not only along the Atlantic Coast but in Greenland, Labrador, James and Hudson's bays, along the Pacific Coast of North America and in Asiatic, European, and Mediterranean waters.

The cause of the die-off was unknown. Various students of the problem have suggested changes in temperature, salinity, pollution, or some alteration of physiological relationship between the plant and its environment. Investigations have considered the influence of sun spots, or of periodic shifting of the moon's position in relation to the earth and the consequent change in sea currents and environment. Some workers have looked to bacteria or fungus disease or parasites as the cause for the blight or wilting disease. A low form of fungus (*Labyrinthula*) is associated with the disease and can be demonstrated to cause the characteristic lesions, a black streaking effect on the leaves, and wilting. In the more advanced stages the leaves turn black and break off, and occasionally the entire plant breaks loose and floats away.

Previous to the die-off, eel grass was used in a variety of ways—as fuel, bedding, fertilizer, packing, upholstery stuffing and insulation. Dried material sold for $20 to $30 a ton. But the grass supplied an important environmental factor for mollusks, crabs and other crustaceans.

Many observers have indicated that eel grass has made a slow but progressive recovery since 1932. The greatest recovery has occurred along the south shore of Long Island in Great South Bay, and in Moriches and Shinnecock bays. In this area the eel grass has recovered to approximately ten per cent of its former abundance, and in limited areas approximately 50 to 60 per cent of the bottom area is now once again covered by eel grass. On the other hand, only one small station has been located along the north shore of the island.

AT the present time most of the plants are growing in dense sod-like beds, with the plants about 18 inches high. Eel grass propagates itself by seed and also by creeping, branching rootstocks. During the summer months portions of the plants break loose naturally to distribute the maturing seed, while entire plants are often broken loose by storms and man's activities. These plants pile up in windrows along the beaches, and turn black.

Although adequate seed has been produced during the past few years no really impressive increase in eel grass has occurred. Evidently the factor or factors that caused the die-off are still operating, or it may be that growing conditions throughout the bay areas are unfavorable due to the shifting silt and sand. In any case, the present growth of eel grass is a dwarf or stunted variety compared to that of previous years.

sportsman's main interest in eel grass has always been based on its value as food for waterfowl. Eel grass constituted up to 80 per cent of the food of brant, and it was also extensively used by Canada geese, black ducks, scaups, and redheads. It follows that the die-off was extremely bad news for ducks and ducking. It was also bad news for many coastal fisheries, in that the

—DONALD SCHIERBAUM,
*Game Research Investigator*

# WATER WEEDS

"A WEED is just a flower out of place"—in which statement carries much truth, although, of course, many weeds (both aquatic and terrestrial) include plants not of flowering types. Perhaps a more useful definition of a weed is a plant growing where it interferes with properties, activities or beliefs of some person or persons. (Even tobacco is not infrequently known as that "foul weed".)

The familiar dandelion is a typical example of a weed whose status is much affected by personal prejudices and beliefs. To a person proud of his lawn this flower is a weed of the worst type —it crowds out the grass. Yet there are some who prefer the cheerful splashes of bright yellow which dandelions make on a spring morning to the monotonous green of a perfect lawn; practical persons may even find dandelion greens useful for food, or may put to service an old recipe for dandelion wine.

And so it goes. Many aquatic weeds are dandelion-like in being good, bad or indifferent according to personal opinion. Duck hunters, in an endeavor to provide attractive food for waterfowl, may purchase such plants as *Potomogeton* (pondweeds such as the "Sago Pondweed"). Yet there is nothing much more disagreeable than to be swimming along in rather deep and apparently unobstructed waters and have a yard or two of pondweed snag you around the neck or ankle. It is not surprising that owners of bathing beaches rack their brains (and the brains of any consulting services they can locate) to cope with problems of so-called sea-weeds and other aquatic vegetation. Truly, these plants pose knotty problems.

At this point it is advisable to make it clear that there are no sure-fire experts on matters of aquatic weed control. If there be any such, and his or her feelings be hurt by this bald statement, will he or she please come forward and draw up replies to the voluminous correspondence written to the Conservation Department and inevitably channeled into the office of the Chief Aquatic Biologist and his long-suffering associates?

This correspondence ranges from local matters ("I have a pond. It gets full of green scum every spring and summer. How do I get rid of this?") to all variations of broad control problems on the larger waters. The replies are various, but frankly and regrettably not any too helpful. Few persons write enough about the plants involved even to pin down the problem. And it doesn't help much if they do happen to include details such as scientific names of the plants, because usually a practical answer just doesn't exist—despite valiant efforts to come up with one. Here and there progress has been made in techniques of weed control, especially on small ponds adaptable to intensive management, but by and large no one seems to have hit the jackpot.

Of course there is much knowledge available concerning water plants, their identification, life history and habits. It is known that like the land plants, they respond to fertilizers. And it's also known that many of our waters, even those free from pollution, are receiving more fertilizers than ever before. (See page 28). Inwash from agricultural lands, drainage from cottage septic tanks, and the return of water used (and more or less changed) by numerous other ramifications of civilization are all factors of importance. In any case, where there are both plant nutrients and light penetration there will be aquatic plants.

BEFORE mentioning the methods which have been used for weed control or for experimental work in that field, mention should be made of the requirements such methods must meet to be successful. Included among them are such considerations as permanence of results, safety (to humans and fish especially) and cost of application. But by way of introduction we might say that most of the methods suggested are as practical as the wooden block method for getting rid of mosquitoes (just place the mosquito on a block and hit it with the other block).

Water plants may be modified by changes in bottom, by changes in light penetration or by changes in fertility

of the water. Changes in bottom: often the drawing of sand for beaches will hold down some types of water weeds, especially those which do not thrive in sandy, wave-swept beaches. Changes in light penetration: under experimental conditions a black dye (nigracine) has been used to cut down light penetration and thus to suppress weeds in deep water. Changes in fertility: under controlled conditions small ponds can sometimes be so heavily fertilized as to result in stimulation of microscopic and other suspended forms of plant life to such an extent that the water becomes almost "soupy" with plankton, with the result that bottom weeds receive inadequate light. The usual recommendation is to fertilize so heavily that the resulting plankton, like dust motes in a flour mill, really cuts down light penetration. (Experts on management of farm fish ponds tell us a good field check is to shove your arm in a pond; if you can see your hand, the water is still too clear.)

OR direct control methods can be used: pulling weeds, cutting them repeatedly (with special weed saws, wire cables or even a scythe), or killing them with chemicals. The use of some chemicals is dangerous to fish life, and is a violation of the pollution law if fish are killed, but 2-4-D preparations have been successfully used to kill some types of weeds without harm to fish.

All the methods enumerated are subject to local application only. You would understand why if you had an aeroplane view of most waters where weeds are troublesome; just as any vacant space in your garden is soon filled with weeds, just so can you expect them to come in after you clean your own beach or otherwise make a small dent in the over-all supply. The fact is that water plants spread rapidly, some types rooting from fragments washed along by the waves, others requiring seeds, tubers or rootstocks but spreading rapidly nevertheless.

There is a rather widespread belief that treating waters with copper sulphate is a simple, economical remedy for controlling undesirable water plants. This is only partially true, in that this substance (also known as blue vitreol) is effective only against some of the smaller types of plants (algae and diatoms). These are not the heavy weeds (pondweeds, water lilies and similar types) which are usually the most troublesome and which cannot be effectively controlled by copper sulphate. Furthermore, copper sulphate should never be used in attempts to kill such growths, as fish will be killed by anything other than a very light dosage of the chemical. In fact even supposedly safe amounts may cause a fish kill if the small plants and animals of the plankton are numerous, simply because of the oxygen depletion which occurs when this organic matter sinks and decomposes.

USED early in the season, copper sulphate has its place. For example, many reservoirs subject to the development of microscopic plants which give water a disagreeable taste or odor are cleared up by careful applications just before the seasonal increase in such organisms.

Complete removal of so-called water weeds in large bodies of water is too fantastic to be a practical goal to shoot for. Nor would their most bitter enemy really want to see all such plants eradicated; plant life is a biological necessity in waters. Whether you see them or not, plants are present unless the area is a biological desert. Tons of invisible plants make up the plankton flora in your favorite fishing lake, regardless of whether or not the more tangible types of weed beds are present. (Incidentally, Sacandaga Reservoir produced fish very abundantly in its early days before a single weed bed had time to develop. Diatoms, algae and other small plants were present for some years before the heavier weeds had time to populate the area, as they have now done.)

And so: it is clear that the real aim of any successful program of weed control must be partial change, rather than complete removal. Just as the forester knows how to improve a stand of trees by removing certain ones and thereby favoring others, perhaps some day the weed bed manager (if he is to become worthy of the name) will work by methods which discourage only certain species. Plants, like animals, carry on a battle for survival among themselves. Pull out a dandelion, and grass fills in the space and helps you hold the ground against weeds. To make a practical application of this principle in aquatic weed control, the first step is to conduct a quiet appraisal of your local water plants and make up your mind which types you really dislike and which ones you would be wise to encourage.

IT should be obvious that this article is far removed from one of the "How to Do It" pieces published in this magazine. As already indicated, the subject does not lend itself to the enumeration of simple remedies. But all of us, whether or not we individually know enough botany to distinguish algae from the flowering plants, have a real stake in seeing that aquatic plant life keeps healthy. "All flesh is grass," and to the mayfly nymph which feeds the trout the slimy coating of diatoms and algae on the stones is the very staff of life. And even if fish were not concerned at all, there would be multitudes of reasons why water plants must be maintained for human welfare. Plants liberate oxygen, and without their action our waters would become dead. It's a lucky thing for us that these plants require no special care, but even so it's highly desirable to know enough about them so we can avoid costly mistakes in mismanaging them.

If, then, we "consider the lilies of the field"—not too literally but as the entirety of the vast plant kingdom—the aquatic realm is no less interesting than the more familiar terrestrial botanical realm. The trees, shrubs and herbiage which clothe the ground are familiar to everyone. But, although some of the water plants cannot escape notice, the vast bulk of them lives unseen. Innumerable tons of single-celled plants are suspended as plankton in fresh and salt waters; the green or brownish coating of the rocks in streams is composed of plants; others reach up from the bottom toward the surface, or emerge above it.

For a short time the water lilies, lotus, pickerel weed and others of the flowering types may be called beautiful. In general, however, water plants have attracted less than their due share of attention.

—JOHN R. GREELEY,
*Chief Aquatic Biologist*

# County of Columbia

DIVERSIFIED is the word that best fits Columbia County, and that goes for its soil, water, forests, fish and wildlife, to say nothing of its history, industry, agriculture—or even the opinions of its sportsmen. But more about that later on.

This rectangular-shaped county, which was organized from a part of Albany County in 1786 (a large part of the southern portion of the county was included in the patent of Livingston Manor), is wedged between Dutchess County on the south, Rensselaer County on the north, the Hudson River on the west and Massachusetts and Connecticut on the east. In all it covers 643 square miles.

All of the county was glaciated; therefore, its soils are derived from glacial till and water laid materials. Most of the soils are well drained, but that doesn't alter the fact that there is a definite need for soil conservation work in the county. Commendably, the Columbia County Federation of Sportsmen, Inc., has taken the bull by the horns and is endeavoring, along with others, to organize the county into a Soil Conservation District.

Most of the county drains into the Hudson River through the Roeliff Jansen Kill (its lower reaches sometimes called Livingston Creek), and Kinderhook and Claverack creeks; a small part of the eastern section of the county drains into the Housatonic River.

Physiographically, Columbia County consists of the western part of the Taconic Mountains and the eastern part of the Hudson lowland, a northern extension of the Great Appalachian Valley. The elevations vary from sea level (at the river) to more than 2,000 feet.

The county has a temperate climate with marked seasonal extremes of heat and cold. Its winters are rather long and severe; the summers are pleasant but usually short. As a rule precipitation is evenly distributed.

All the land was originally forested, but agricultural development was rapid and today is well organized and quite extensive. At present agriculture consists mainly of dairying and the production of forage crops, but the fruit industry (apples, cherries, peaches) has become increasingly important. Manufacturing has shifted from water-powered light goods mills to electric-operated iron and steel, cement and other heavy industries, mostly centered at the county seat of Hudson (third oldest city in the State and once a whaling port).

Incidentally, the county reeks with antiquity. A fine network of Federal, State and county roads takes one to scores of historical places. Or to view such modern structures as the Rip Van Winkle Bridge which spans the Hudson River just below Hudson; or to the Roeliff Jansen Central School at Hillsdale, the plant of the largest centralized school district in the State; or to the depot to take one of the New York Central's crack streamliners, or its Boston and Albany Division's new Beeliner (trollylike, single diesel unit coach) to metropolitan communities. Motor transportation, of course, killed off the river traffic that once flourished along the county's shoreline.

Because of its proximity to metropolitan New York City, the county is popular with holidayers who prefer short trips from home. Its picturesque lakes and ponds get their share of these vacationers. Its abandoned farms have been snapped up by erstwhile city peoples for summer and year 'round residence. (Just another good argument for a Soil Conservation District—to return this class of land to productive capacity.)

Lake Taghkanic State Park (750 acres) at Lake Taghkanic, Taconic State Park (6,200 acres) at Copake Falls and Rudd Pond (200 acres), part of the Taconic State Park system, down in the southeastern corner of the county, draw thousands who camp, boat, fish, swim, picnic and hike, or go in for winter sports at Copake Falls and Rudd Pond. With completion of the Taconic Parkway from Dutchess County to Route 82A in Columbia, thousands more will have shorter and quicker access to the county. And the big Thruway together with its Berkshire spur will further expedite travel into the county.

Superhighways have spelled headaches for the local sportsmen and landowners, however; good roads have considerably increased the hunting and fishing pressure from outside the county. Some anticipate no lessening of this pressure when these streamlined highways are built, but many others are hopeful that the super-duper roads will take the city people and New Englanders right on through. That's a faint hope, because the hunting and fishing are excellent in the county. And this causes still others to forecast tighter than ever posting by the landowners.

The Roeliff Jansen Kill, Claverack, Kinderhook and Taghkanic creeks are outstandingly good trout streams. (Black Grocery is a synonym for the Roe Jan among many anglers who have recently "discovered" this fine stream.) Scores of lesser streams are good producers for the creel. Of the 17.32 miles of public fishing rights on the Kinderhook in Columbia and Rensselaer counties, 5½ miles are in Columbia. All streams are well stocked under a newly-developed planting-by-watershed zoning plan in which the Federation co-operates with the Department. Last year over 35,000 brown trout and over 15,000 brook trout were planted in the county's streams; many hundreds of these fish were of legal size. Nor are the lakes neglected when it comes to stocking fish. Lake Taghkanic got 400,000 and Copake and Kinderhook lakes a million each of pikeperch fry. Salvage crews of the Department transferred several thousand bullhead catfish from outside waters to Kinderhook and Queechy lakes and also put some calico bass, largemouth bass and yellow perch in Kinderhook Lake.

THE Federation co-operates in the release of pheasants under the new range distribution plan; 139 square miles of the county's area are in the best quality range now supporting a native population of birds, and 330 square miles are in Class II (or intermediate) range which supports a fair pheasant population and where some natural reproduction occurs. The remaining 174 square miles is non-productive pheasant range—forested, brush lands, with high barren hilltops—but it's good for grouse, woodcock, deer and squirrels. The rabbit cycle is on the upswing in the lowlands.

The Federation operates its own central rearing station near Claverack, raising some 1,800 pheasants out of 2,000 day-old chicks received annually from the Department. The Board of Supervisors makes an annual appropriation to help defray expenses and the Federation (from revenue from field days, lectures and sale of birds to its member clubs) meets the rest of the cost of operation of the station. Some clubs also buy their own birds to rear and release; 4-H Club co-operators raise hundreds of additional birds for release. The 4-H'ers also participate in predator control work (the annual fox trapping contest) and a few clubs hunt vermin.

Best deer hunting is in the Austerlitz section of the eastern part of the county. (The deer take in the county last season was 342.) In fact, the deer hunting has been so good in that area that the number of violations increased at an alarming rate. The Federation met the challenge, however, by proposing patrols of Special Game Protectors whom the Department qualified for the enforcement job. The violators now are as scarce as the bear and wildcats in the Austerlitz, where these animals once abounded. (Incidentally, the beaver population has staged a remarkable comeback in that section, with the help of judicious protection.)

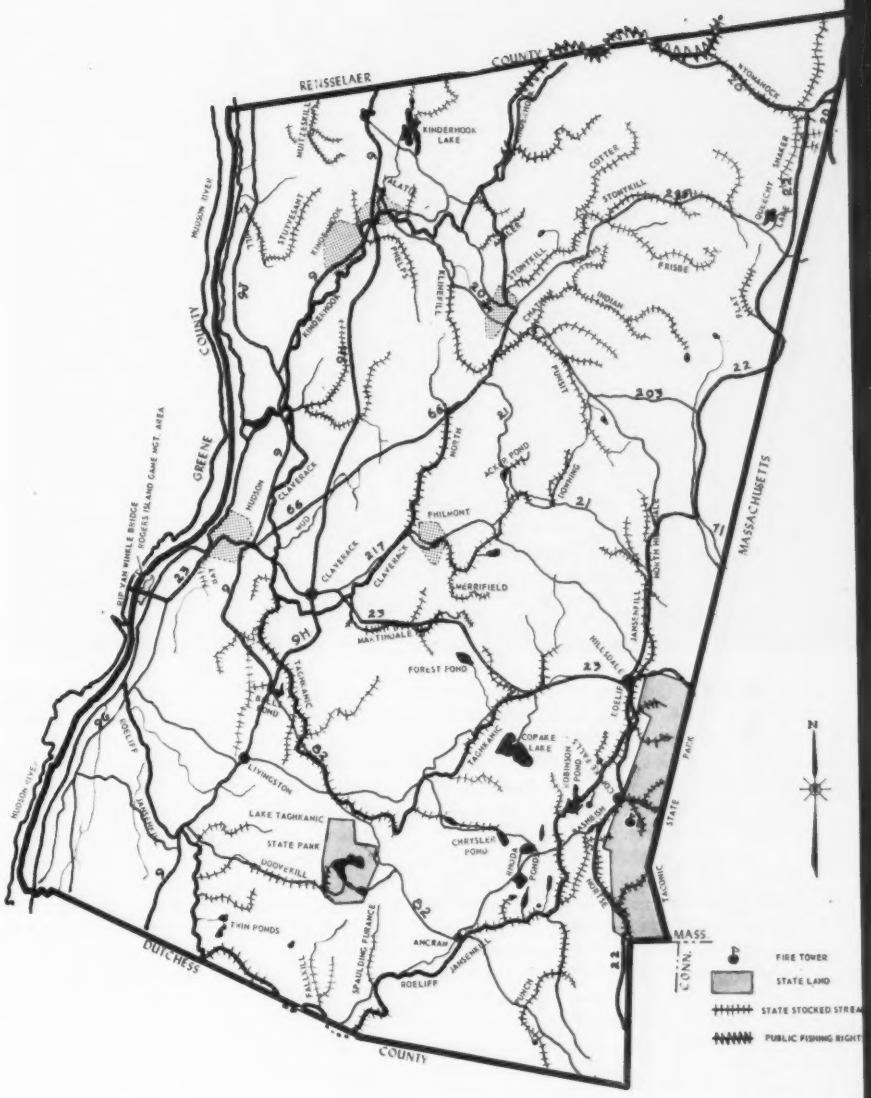
Columbia is one of the few counties in the State in which hunters can take advantage of a double grouse and woodcock season; the main tracks of the Boston and Albany provide the dividing line for the northern and southern zones. And the "flats" off Stockport offer some of the best duck gunning along the Hudson River. Rogers Island Game Management Area is near the Rip Van Winkle Bridge.

Columbia County is in Forestry District 12; 65 woodlot owners are co-operators under the Forest Practice Act and have signed up over 5,000 acres on which to carry out definite standards of forestry practice. Fifty-one management plans to date have been prepared for the co-operators by the Department, covering some 4,000 acres. From 1909 to the end of 1949, four million trees were distributed from State nurseries for private planting in the county.

To safeguard the natural stands, the farm woodlots and the plantations, the Department maintains a fire tower on Mt. Washburn near Copake Falls. Towers in Dutchess, Rensselaer and Greene counties also overlook the county. While the fire record in Columbia County is not all that the Bureau of Forest Fire Control would like it to be, the number of fires has been decreasing each year. And although the total acreage burned has also been diminishing yearly, the Bureau believes that with constant vigilance and greater care the number of fires and area burned can become almost negligible.

AS for diversification of opinion among sportsmen in Columbia County—it's always been a noisy wheelhorse in conservation. In the past it has made for sound, strong clubs and an active Federation. Even now, with closer co-operation and more skillful direction, it can continue to mean much for the advancement of sound conservation work in Columbia County.

—ROLAND B. MILLER



*How To Do It (10):*

# RAFTS

THE dictionary defines a raft as follows: "A sort of float or other pieces of timber fastened or lashed together side by side for the convenience of transporting the constituent materials (or persons) down rivers, across lakes, etc."

In this instance we aren't concerned with the construction of a huge raft on which merchandise is to be transported, and on which frequently living quarters in the form of a log cabin are built. What we're interested in is the type of raft that can sometimes save a vacation, by supplying transportation or a place to fish from when no boat or canoe is available. The raft as such was the forerunner of the dug-out and canoe. Primitive man lashed together two or three driftwood logs with withes, vines or rawhide thongs and from it fished with a spear made sharp by charring in his campfire.

Obviously a raft can still be made in that same manner, or lashed with ropes or bail wire, but you can do a better job if you take along with you an extra bait can filled with spikes, and a light single-bitted axe. Even so you'll have more fun fishing on your second trip than on the first, but you won't get as much exercise.

The ease with which the raft can be built will depend fundamentally on the availability of suitable logs. For instance, a couple of large dry pine logs would be ideal, if found just where you could roll them into the water, and spike them together with crosspieces. But this never happens, so be prepared to go to work.

Right here, let me point out that many trees are unsuitable. Green hardwood logs of whatever species can't be used—for the excellent reason that they do not float. Green softwood logs do float, but they aren't buoyant enough to support much additional weight. Furthermore, in the Forest Preserve it isn't legal to cut green trees on State land.

Therefore find a place where you can carry, drag or roll to the shore about ten dry cedar, spruce, pine or balsam logs. They may or may not be all of the same kind. Be sure to trim off the knots smooth; they are often sharp enough to snag your boots or rubbers, or bruise your hands. The logs should be ten or twelve feet long and about eight inches in diameter, (nothing less than six inches and nothing more than ten inches, because you probably won't be able to get bigger ones down to the shore). Dry cedar is the lightest and most buoyant. Select a place to arrange the logs close together, side by side. If they vary much in size, place the larger, more buoyant ones on the outsides; try to balance them as much as possible, as this makes for greater stability.

When assembling the logs it's a good idea to place them on two small logs or poles, laid at right angles. These will serve as rollers so that when the raft is nailed together it will launch easily after it's ready to go.

Cross ties, the length of which is determined by the overall width of the logs laid close together, should be cut. They should be about two inches in diameter and preferably of the same material as the logs. The more you cut the better. Three or four would hold the raft together, but the extra ones will serve as decking, particularly along the center of the raft where you will stand (or sit, if you build something to sit on). The decking serves to make the raft a little drier underfoot. The bait can will be less likely to come up missing. Nail each cross tie to every log. Now hunt up a nice long, light but sturdy pole. Sound dry spruce makes the best. Be sure and trim all knots off smooth as they are sometimes needle sharp, and you're going to use the pole to propel the raft.

If your raft is for use on a river where you may hit some rocks in the current, specially sturdy construction is required; a raft is a heavy affair and gets up a lot of momentum, and when you bang into a boulder it's likely to fall apart just when you need it most. Therefore, for a cruise down river, it pays to spend a little extra time on the construction job.

YOU are now ready for the launching. A little prying and pushing and off you go—with the very first known means of controlled navigation.

All this has taken a long time; probably there's none left for fishing. So you carefully moor your raft, concealing it as much as possible. You surely want it to be there when you return.

—AL DAVIS

# WOOD FOREVER

by J. A. Cope, *Extension Forester*

OUT of our past as a thrifty pioneering people, there was developed one maxim which is appropriate to quote. "A penny saved is a penny earned." In other words, it may be just as good a conservation measure to protect the wood about the home, the farm, the camp, from inevitable decay as it is to go out and plant an idle acre to trees.

Aside from fire and certain insects, wood as a construction material has only one important enemy: wood destroying fungi. But these fungi, it is well to remember, can act only in the presence of three important environmental factors—air, moisture, and heat. The wonderful and significant fact is that in our efforts to help make wood lifetime lasting, we don't have to eliminate all three of these environmental factors. Take away just one, any one of the three, and the wood is virtually everlasting.

We have all seen how true that is in the case of the unpainted wooden sides of a barn or other building. The wood has remained sound and firm through decades of exposure to the elements, simply because the moisture isn't available. The side of the building dries out so rapidly the spores of decay cannot take hold. How different the story with wooden shingles on a roof of very slight pitch, or how much more rapid is the decay of shingles on a north sloping roof than on the south exposure—even though the pitch is the same.

THE first rule in protecting wood that is to be used around the home, especially if it is to receive a coat of paint, is that it be thoroughly seasoned. No wood can become thoroughly seasoned unless it has the equivalent of four months' drying during the summertime, with ample air circulation. Cornell Extension Bulletin #747, entitled "Home Grown Lumber for Farm Buildings", covers this matter in detail.

It is not hard to picture what happens when unseasoned wood (lumber) is given a coat of paint. The moisture is sealed inside and when the paint blisters and cracks, the spores of decay enter and decay starts at once. Painting unseasoned wood is as bad as setting fence posts in without removing the bark.

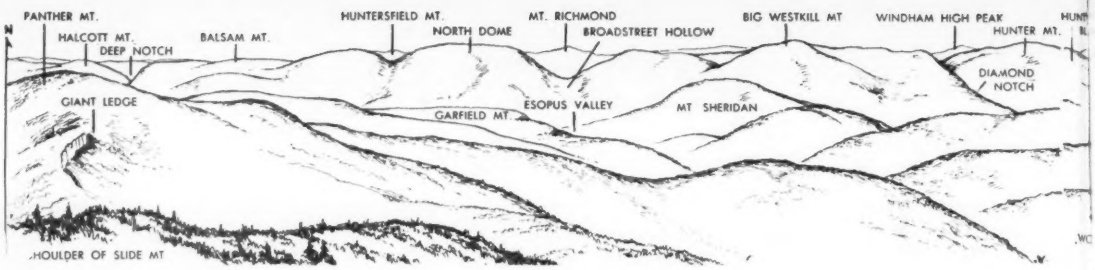
There are, however, numerous instances where it is not practical to paint, and where it is impossible to keep moisture away from wood. In such cases the proper procedure is to treat the wood with a fungicide, so that in spite of the presence of moisture, heat and air, the wood remains sound in service.

Science has come profitably to the help of the users of wood, and there are now on the market chemicals that so poison the wood cells that decay cannot operate. Creosote is the best known and longest in use of these preservatives. Unfortunately, good penetration of creosote is secured only with the help of heat and pressure. All telephone poles and railroad ties are thus treated for a long life of service. More recently, chemistry has developed other chemicals, toxic to fungi, which can penetrate seasoned wood without the use of either heat or pressure. The two most readily available now, under various trade names, are copper naphthenate and pentachlorophenol.

Seasoned wood that is exposed to moisture only at intervals, like shingles on a roof or a joist under the porch, are rendered long-lasting by dipping or brush-treating the wood. Where the moisture supply is constant and in abundance, dipping or brushing is not considered adequate. In this case the preservative must get *in* the wood, not just *on* it, if the desired long life is to be attained. This is achieved by cold-soaking the thoroughly seasoned bark-free wood for periods up to 72 hours.

In the case of fence posts, (the toughest assignment any wood has to undergo around the home or farmstead), it has been found that woods which have no natural durability whatsoever in contact with the soil, absorb the preservatives extremely well by this cold-soaking method; pine and hemlock, oak, and popple will readily soak up the preservative. Since these naphthenates and phenols are not soluble in water, they can never leach out of the post.

Shingles, silo staves, wooden sills and joists, interiors of cow sheds, sap houses, potato and cabbage storage bins, all need to be dipped or brushed with preservatives. Posts, poles, wooden framework around wells, legs of wooden benches that stay outdoors the year round, must be soaked for several days in the preservative.

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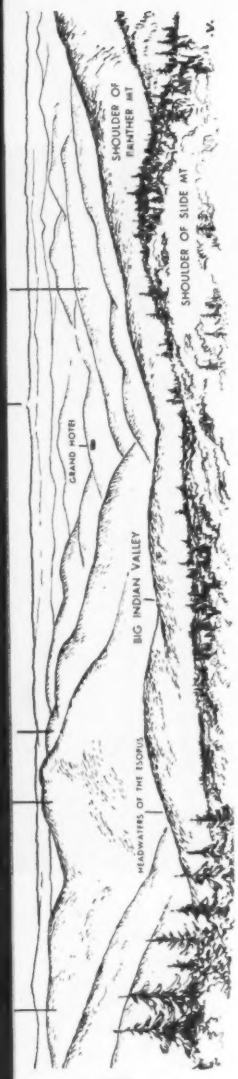


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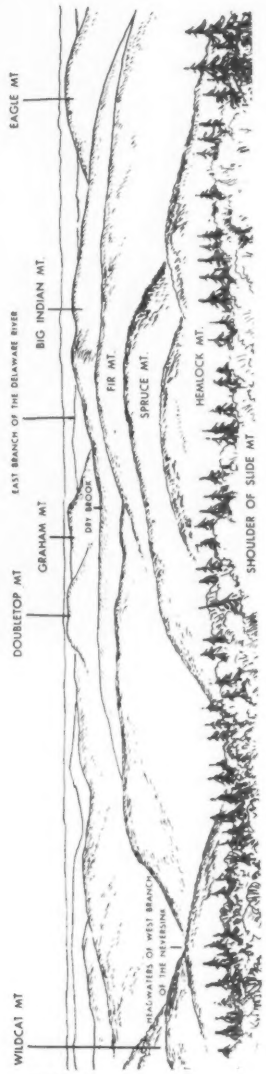


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# The Catskills

HIGHEST mountain in the Catskills is Slide, 4,204 feet. As might be expected, the tower on the top of Slide offers the best view to be had anywhere of the Catskill Region.

The profile drawings on these pages are a 360 degree map of that view. If the drawings were placed end to end in the sequence indicated by the numbers (1 to 7), they would show what the observer sees when he stands on the top of Slide, facing first to the north (profile number 1), and then turning completely around to the right. Thus profile number 2 shows the view to the northeast of Slide, profile number 3, the view to the east and southeast, and so on until the right side of profile number 7 brings the observer back again to the north, and Panther Mountain.

The drawings on these pages are by Stephen J. Voorhies, and are taken from the book entitled **Enjoying the Catskills,** published by Funk & Wagnalls, written by Arthur C. Mack, and illustrated by Voorhies. On the jacket, the book ($2) is described as a "practical guide for all visitors to the Catskill Mountain Area." It is exactly that.—Editor

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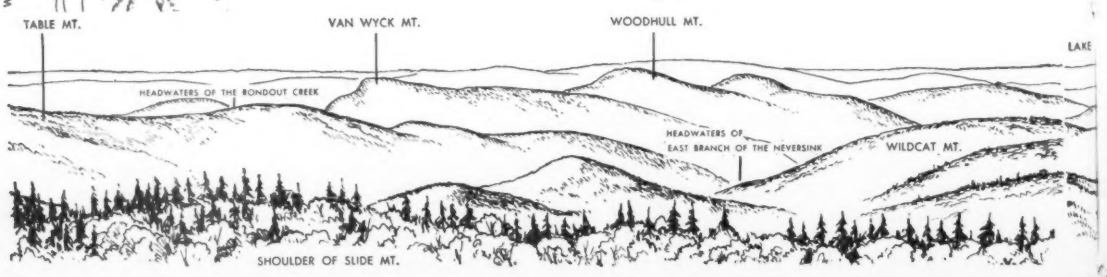

SUPPLEMENT TO THE NEW YORK STATE CONSERVATIONIST AUGUST-SEPTEMBER, 1950

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# THE NEW YORK STATE Conservationist

Volumes One through Four

From August, 1946 to June-July 1950

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| New Fish in New Waters | James R. Westman, Edward Bevelander | AM 50 |
| Salt Water Resources | James R. Westman | AM 47 |
| Shad | Albert W. Bromley | AM 49 |


## FISHING


| | | |
|---|---|---|
| Cold Facts on Ice Fishing | Fred Everett | DJ 46–47 |
| Decoys Work on Fish, Too | Ralph H. Milne | FM 50 |
| Don't Dump 'Em (Bait Fish) | John R. Greeley | A 46 |
| Facts on Fall Fishing | Bob Bush | AS 47 |
| Fishing on a Small Scale | John R. Greeley | AM 47 |
| Guide to Happier Fishing | Clayt Seagears | AM 50 |
| Micropterus Doldrums | Bob Bush | A 46 |
| New York's Salt Water Calendar | | AM 47 |
| On Not Catching Brown Trout | Sparse Grey Hackle (Alfred W. Miller) | JJ 48 |
| Our Public Streams (Map) | | AM 47 |
| Perch Basket | | DJ 46–47 |
| Salt Water Lore | Everett A. Brown | JJ 47 |
| Shantytown (Ice fishing) | Ray Bender | DJ 47–48 |
| Skinning a Bullhead | J. D. Bulger | JJ 49 |
| Talk About Ice Fishing | J. D. Bulger | FM 50 |
| The Seth Green Rig | | A 46 |
| Water Travel | Fred Everett, J. D. Bulger | AM 50 |
| Zone the Trout Fisherman? | Arthur B. Flick | AM 49 |


## FISH MANAGEMENT


| | | |
|---|---|---|
| Airborne Trout | Fred Everett | AM 47 |
| A New Deal for Catharine | Cecil E. Heacox | FM 47 |
| Cranberry Lake Fishing Threatened | W. M. Lawrence | AS 49 |
| Forty-Three Tons of Muskalonge | Donald G. Pasko | AS 49 |
| Keys to Landlocks | John R. Greeley | FM 47 |
| Latest on Landlocks | John R. Greeley | DJ 47–48 |
| Making Muskies | Clayt Seagears | JJ 47 |
| New Fish in New Waters | James R. Westman, Edward Bevelander | AM 50 |
| Rotenone | John R. Greeley | AM 49 |
| Stocking for Production | C. W. Greene | AM 50 |
| 1000 Islands Bass | Udell B. Stone | JJ 49 |
| Tools of the Trade (Fisheries research) | John Grim | JJ 50 |
| What's Wrong With Your Bass Pond | John R. Greeley | JJ 47 |
| Your Fish and Game Managers | | DJ 46–47 |


## FISH PLATES (IN COLOR)


| | | |
|---|---|---|
| Brook Trout | | FM 48 |
| Brown Trout | | JJ 48 |
| Chautauqua Muskalonge, Long-Nosed Gar | | AS 49 |
| Common Bullhead, Spotted Cat | | DJ 48–49 |
| Horned Dace, Golden Shiner, Emerald Minnow | | AS 48 |
| Lake Trout | | DJ 47–48 |
| Largemouth Bass, Smallmouth Bass | | AS 47 |
| Northern Pike, Chain Pickerel | | FM 49 |
| Punkie (Common sunfish) | | JJ 47 |
| Round Whitefish, Adirondack Whitefish, Gulliver Lake Whitefish | | ON 47 |
| Sauger or Sand Pike, Yellow Pike-Perch or Walleyed Pike, Blue Pike | | ON 48 |
| Shad | | AM 49 |
| Sheepshead and White Bass | | DJ 49–50 |
| Short-Headed Red-Fin Sucker, Common Sucker | | AM 49 |
| Smelt and Cisco | | FM 50 |
| Steelhead Rainbow Trout | | AM 48 |
| Red-Bellied Sunfish and Blue-Gill Sunfish | | ON 49 |
| Yellow Perch, White Perch | | JJ 49 |


## FISH RESEARCH


| | | |
|---|---|---|
| Fish Facts | Cecil E. Heacox | AS 48 |
| Fish Parasites | Louis E. Wolf | AS 49 |
| Fishing on a Small Scale | John R. Greeley | AM 47 |
| More Facts — More Fish | Cecil E. Heacox | AM 49 |
| Tools of the Trade | John Grim | JJ 50 |


## FISH SALVAGE


| | | |
|---|---|---|
| Finny Salvage | Fred Everett | A 46 |
| Net Profit | Albert W. Bromley | JJ 49 |


## FLOODS AND FLOOD CONTROL


| | | |
|---|---|---|
| Flash Flood | P. W. Fosburgh | AM 49 |
| Rain | P. W. Fosburgh | AM 47 |
| Seashore Planting | Henry Reppa | AM 50 |
| There's No Detour (S. C. S. Districts) | Hugh Wilson | JJ 48 |


## FLOWERS AND OTHER PLANTS


| | | |
|---|---|---|
| Ginseng, the Magic Root | P. W. Fosburgh | AM 50 |
| Poison Ivy | A. T. Shorey | JJ 48 |
| Skunk Cabbage | J. D. Bulger | AM 49 |
| Spring Flowers | Dr. Homer D. House | AM 48 |
| Sweet-Scented White Water Lily | C. W. Greene | JJ 50 |
| To Pick or Not To Pick (Wildflower Law) | E. W. Littlefield | AM 50 |
| Waterfowl Food Plants | Donald D. Foley | JJ 49 |
| Yellow Lotus | Homer D. House | AS 47 |


## FLOWER PLATES (IN COLOR)


| | | |
|---|---|---|
| Skunk Cabbage | | AM 49 |
| Sweet Scented White Water Lily | | JJ 50 |
| Trailing Arbutus | | AM 48 |
| Yellow or Downy Lady's-Slipper | | AM 50 |


## FOREST FIRE CONTROL


| | | |
|---|---|---|
| Fire | | DJ 47–48 |
| Forest Ranger | Arthur G. Draper | ON 47 |
| If You Have to Fight Fires | Kinne F. Williams | ON 48 |
| Putting Eyes in the Skies (Fire towers) | Kinne F. Williams | A 46 |

| | | |
|---|---|---|
| 3,750 Unsung Heroes (Fire wardens) | ..... | JJ 47 |
| Word of Warning | ..... | ON 46 |

**FOREST FIRES**

| | | |
|---|---|---|
| Fire! (Season of '47) | ..... | DJ 47–48 |
| Great Fires in 1903 | Harry W. Hicks | AS 47 |

**FOREST MANAGEMENT**

| | | |
|---|---|---|
| A Community Forest | Nick Drahos | DJ 49–50 |
| Bringing Forestry into the Woods | Wm. G. Howard | A 46 |
| Dollars and Sense on the Farm Woodlot | A. J. Woodford | JJ 47 |
| Marketing Timber | David B. Cook | DJ 48–49 |
| My Business is Hardwoods | Martin L. Fenton | DJ 49–50 |
| Donaldson Woodlot | W. W. Clingan, E. W. Littlefield | JJ 48 |
| Lattabrook Woodlot | W. W. Clingan, E. W. Littlefield | AS 48 |
| New Chestnuts for Old | Thomas J. Page | AM 50 |
| Pulp Country | Lyman Beman | AS 49 |
| Report from District Foresters | ..... | AS 47 |
| State Aid in County Reforestation | E. W. Littlefield | ON 49 |

**FOREST PEST CONTROL**

| | | |
|---|---|---|
| Attack By Air | Bureau of Forest Pest Control | AS 49 |
| Bugs in Your Vacation | Donald L. Collins | JJ 50 |
| DDT | Wm. M. Foss | JJ 48 |
| DDT Bombs Away | Wm. M. Foss | A 46 |
| Dutch Elm Disease | W. Howard Rankin | ON 49 |
| Hemlock Borer | C. J. Yops | JJ 50 |
| Know Thine Enemy (Pest identification) | Wm. M. Foss | JJ 47 |
| New Chestnuts for Old | Thomas J. Page | AM 50 |

**FOREST PRESERVE**

| | | |
|---|---|---|
| Moose River Menace | Perry B. Duryea | FM 47 |
| Your Forest Preserve — A Time For Decision | ..... | DJ 46–47 |

**FOREST PRODUCTS**

| | | |
|---|---|---|
| Bedding from Wood Chips | H. G. Strait | JJ 50 |
| Christmas Trees and Land Use | A. S. Hopkins | DJ 46–47 |
| Cinderella Goes to Town (Scotch pine) | E. W. Littlefield | DJ 49–50 |
| Cooperstown Cooperative | Robert Johnston, Jr., R. B. Miller | JJ 50 |
| Hardwood for Pulp? | David B. Cook | AS 47 |
| Hudson River Log Marks | ..... | AM 47 |
| Marketing Timber | David B. Cook | DJ 48–49 |
| Maple Syrup | Prof. J. A. Cope | FM 48 |
| My Business is Hardwoods | Martin L. Fenton | DJ 49–50 |
| No More Sawdust Piles | Earl L. Stone, Jr., Agnes B. Palmer | AM 49 |
| Pulpwood | David B. Cook | FM 48 |
| Sapping It | Prof. J. A. Cope | FM 49 |
| Stove Wood | E. W. Littlefield | FM 49 |
| The Big Boom (River Driving) | P. W. Fosburgh | AM 47 |

**FORESTRY**

| | | |
|---|---|---|
| Big Business in Trees | E. J. Eliason | JJ 49 |
| Bringing Forestry into the Woods | Wm. G. Howard | A 46 |
| New Tools for Lumbermen | David B. Cook | JJ 47 |
| On Borrowed Time (Species preserved by man) | E. W. Littlefield | JJ 50 |
| State of New York Forest Policy | Wm. G. Howard | AS 48 |
| Weather and Forestry | ..... | FM 50 |
| Your Postwar Forestry in a Nutshell | ..... | A 46 |

**FURBEARERS**

| | | |
|---|---|---|
| A Breather for the Beaver | Gardiner Bump | AM 47 |
| Beaver | W. J. Hamilton, Jr. | FM 50 |
| European Hare in New York | Fred Streever | FM 47 |
| Farm Pond for Muskrats | Arthur H. Cook | DJ 48–49 |
| 50 Years in the Fur Business | Joseph F. Buff | DJ 49–50 |
| Fisher | Arthur H. Cook | DJ 49–50 |
| Fur, New York's First Industry | Clayt Seagears | DJ 46–47 |
| Furs of New York, Past and Present | Clayt Seagears | DJ 49–50 |
| Hare Raising Experiences | Earl R. Holm | A 46 |
| Mrs. Richards' Beavers | Mrs. A. M. Richards | ON 49 |
| Muskrat | Arthur H. Cook | DJ 46–47 |
| Otter | Arthur H. Cook | FM 48 |
| Snowshoe Rabbits | Joe Dell | FM 49 |
| Where's the Beaver? | Roland B. Miller | AM 49 |

**GAME**

| | | |
|---|---|---|
| Game for Gourmets (Commercial) | Bob Bush | FM 48 |
| Postwar Fish and Game at a Glance | ..... | ON 46 |
| Status of Game | ..... | DJ 47–48 |

**GAME MANAGEMENT**

| | | |
|---|---|---|
| A Breather for the Beaver | Gardiner Bump | AM 47 |
| Beaver | W. J. Hamilton, Jr. | FM 50 |
| Bounty System | W. J. Hamilton, Jr. | AS 47 |
| Deer in Pennsylvania | ..... | DJ 49–50 |
| Deer Kill (1946) | ..... | FM 47 |
| Deer Kill, Season of 1948 | Arthur W. Holweg | FM 49 |
| Dog Problem | Michael Petruska, George Weiffenbach | AS 49 |
| Experiment on Valcour Island | ..... | FM 50 |
| Feeding the Hungry Whitetail | ..... | FM 49 |
| Game Protector | ..... | AS 47 |
| How We Decide on a Beaver Season | Arthur W. Holweg | FM 50 |
| New York's Coyote Control Problem | Greenleaf T. Chase | DJ 49–50 |
| Nuisance Wildlife Control | Ben O. Bradley | FM 48 |
| Predation | Robert W. Darrow | ON 47 |
| PR–48–D (More cover on the land) | Ben O. Bradley | FM 49 |
| Reports From District Game Managers | ..... | JJ 47 |
| Ruffed Grouse | Robert W. Darrow | ON 49 |
| Spring Geese at Oak Orchard | Robert F. Perry | AM 49 |
| Trapping Season for Muskrat and Mink | Arthur H. Cook | ON 49 |
| Whitetail in New York | J. Victor Skiff | ON 47 |
| | Robert W. Darrow | DJ 47–48 |
| Winter Deer Feeding | Robert W. Darrow | FM 48 |
| Worth His Salt? (Porcupine) | ..... | A 46 |
| Your Fish and Game Managers | ..... | DJ 46–47 |

**GAME PROPAGATION**

| | | |
|---|---|---|
| Ducks (Made in New York) | Robert A. Wells | ON 46 |
| First Aid for Pheasants | Fred Everett | AS 47 |
| Hare Raising Experiences | Earl R. Holm | A 46 |
| Goose Stocks Ducks | Earl R. Holm | AS 49 |
| Mr. Mahoney and the Elk | Justin T. Mahoney | AS 47 |
| Poor John Pheasant | Earl R. Holm | AM 48 |
| Ringneck Reservoir | Earl R. Holm | ON 46 |
| Ringnecks in Reserve | ..... | A 46 |
| Spending to Save (Game Farms) | Earl R. Holm | AM 50 |

**GAME RESEARCH**

| | | |
|---|---|---|
| Anatomy of a Duck | E. L. Cheatum | ON 48 |
| Bone Marrow as an Index of Malnutrition in Deer — (Color plates) | E. L. Cheatum | AM 49 |
| Flying for Facts | Walt Crissey | FM 47 |
| Fox vs Pheasant | ..... | DJ 47–48 |
| More About the Seneca Test | Dirck Benson, Ben O. Bradley | FM 48 |
| More Than Meets the Eye | Clayt Seagears | FM 50 |
| Our Duck Band Returns | Robert W. Darrow | DJ 48–49 |
| Oyster Bay Duck Club | Don Schierbaum | FM 49 |
| Rabies and Fox Control | Ben O. Bradley | ON 48 |
| Ruffed Grouse | Robert W. Darrow | ON 49 |
| Spotted Rabbit Liver — Tularemia and Tapeworms | E. L. Cheatum | FM 49 |
| The Growth of the Deer Antler | Joseph C. Aub, George B. Wislocki, Chas. M. Waldo | DJ 49–50 |
| Whitetail Fertility | E. L. Cheatum | AM 47 |
| Winter Deer Mortality — This Fall's Hunting Prospects | C. W. Severinghaus | AS 48 |

**GUIDES**

| | | |
|---|---|---|
| Guides and Guiding | P. W. Fosburgh | ON 49 |

**HISTORICAL**

| | | |
|---|---|---|
| Adirondacks (Seneca Ray Stoddard, Photographer) | ..... | FM 50 |
| Chains and Links (Surveying) | A. H. King | AM 49 |

| | | |
|---|---|---|
| 50 Years in the Fur Trade | Joseph F. Buff | DJ 49–50 |
| Furs of New York, Past and Present | Clayt Seagears | DJ 49–50 |
| Giero's Rats | A. T. Shorey | ON 49 |
| Indian Hunter, The | Dr. Carl E. Guthe | ON 47 |
| On Borrowed Time (Trees saved from extinction) | E. W. Littlefield | JJ 50 |
| Those Good Old Days (Logging) | | AM 50 |
| Where's the Beaver | Roland B. Miller | AM 49 |
| Wood Stoves | Roland B. Miller | FM 49 |


### HOBBIES


| | | |
|---|---|---|
| Arthur Currier — Collector | P. W. Fosburgh | FM 47 |
| Caves in New York | Clay Perry | JJ 48 |
| Homespun Hackles (Fly tying) | Clayt Seagears | JJ 47 |
| Mrs. Richards' Beavers | Mrs. A. M. Richards | ON 49 |
| Notes on Falconry | Clayt Seagears | AS 48 |
| What to Do With Carp? Answer: Eat 'Em | | AM 50 |


### HUMOR


| | | |
|---|---|---|
| Adirondack Lie | Barnett Fowler | ON 48 |
| Bass Lures | Barnett Fowler | FM 49 |
| Decoys Work on Fish, Too | Ralph H. Milne | FM 50 |
| Deer Season a Flop | P. W. Fosburgh | AM 48 |
| Department Photographer | P. W. Fosburgh | FM 50 |
| Did You Say Rabies? | | A 46 |
| Dr. Greeley, His Slings, Arrows and Outrageous Fortune | | DJ 49–50 |
| Elegy on Opening Day of the Trout Season | V. O. Sturtevant | AM 48 |
| Guides and Guiding | P. W. Fosburgh | ON 49 |
| Human Side of It | | A 46 |
| I Married a Ranger | Mrs. Karl Riesland | AM 50 |
| I Move We Adjourn | Roland B. Miller | JJ 49 |
| It Ain't Necessarily So | J. D. Bulger | AM 50 |
| Kiddy Nook | Larry Harper | JJ 50 |
| Life on an Adirondack | John Wilkins | DJ 49–50 |
| 1948 Gift Preview | Clayt Seagears | DJ 47–48 |
| On Not Catching Brown Trout | Sparse Grey Hackle | JJ 48 |
| Report on the Angler | Barnett Fowler | AS 48 |
| Rough It — and Wreck It | J. D. Bulger | JJ 50 |
| The Care and Feeding of Fishermen | J. Victor Skiff | JJ 47 |


### HUNTING


| | | |
|---|---|---|
| Beaver Take by Counties, 1950 (also otter) | | AM 50 |
| Big Game Hunter | Hugh Fosburgh | FM 48 |
| Big Game Season for Archers | Barnett Fowler | AS 48 |
| Deer: New York's Billion Dollar Asset | | |
| Hunting Possibilities in New York | C. W. Severinghaus | ON 49 |
| This Fall's Deer Hunting Prospects | C. W. Severinghaus | ON 49 |
| The Live Weight — Dressed Weight and Live Weight — Edible Meat Relationships | C. W. Severinghaus | ON 49 |
| Save Your Skin | George H. Lesser | ON 49 |
| First Aid for Gunshot Wounds | Gen. Norman Kirk | ON 48 |
| Grancel Fitz Scoring System (Deer heads) | | ON 46 |
| Half a Million Hunters | | ON 46 |
| Hippity, Hoppity, There Goes LaBiche (Elk) | P. W. Fosburgh | DJ 46–47 |
| Last Night a Fresh Snow Fell (Hounds) | Fred Streever | DJ 46–47 |
| New York's Record Heads (Deer) | P. W. Fosburgh | ON 46 |
| Oyster Bay Duck Club | Don Schierbaum | FM 49 |
| Porcupine — Worth His Salt? | | A 46 |
| Quips on Quackery | Clayt Seagears | ON 48 |
| Some Aspects of the Past Hunting Season | | DJ 48–49 |
| State's Ten Best Heads | P. W. Fosburgh | ON 46 |
| The Indian Hunter | Dr. Carl E. Guthe | ON 47 |
| Trends (Hunting pressure, etc.) | Clayt Seagears | DJ 48–49 |
| Winter Deer Mortality — This Fall's Hunting Prospects | C. W. Severinghaus | AS 48 |
| Word of Warning (Accidents) | | ON 46 |


### INSECTS


| | | |
|---|---|---|
| Aquatic Insects | | AM 50 |
| Attack By Air | Bureau of Forest Pest Control | AS 49 |
| Big Bug of the Bass Riffs | Clayt Seagears | ON 49 |
| Blackfly | Dr. R. D. Glasgow | AM 48 |
| Bugs in Your Vacation | Donald L. Collins | JJ 50 |
| Fly Dope | P. W. Fosburgh | JJ 50 |
| Hellgrammite | Clayt Seagears | ON 49 |
| Hemlock Borer | C. J. Yops | JJ 50 |
| Know Thine Enemy (Forest pests) | Wm. M. Foss | JJ 47 |
| Maintaining Food in Trout Streams | Dwight A. Webster | AM 50 |
| Trout Food in Streams | Dwight A. Webster | AM 50 |


### INSIDE ON THE OUTDOORS
by Clayt Seagears


| | | |
|---|---|---|
| Barn Owl — The Ghost in the Attic | | FM 50 |
| Bobcat | | DJ 48–49 |
| Coyote — Unbidden Guest | | AM 49 |
| Deer (Dressing and butchering) | | ON 47 |
| Ducks of New York | | ON 48 |
| Finicky Feeders — Rocks — Coon — Fish Lines — Panther | | A 46 |
| Five Curious Critters (Bat, mole, etc.) | | AS 47 |
| Foliage — Commercial Fish — Setter | | ON 46 |
| Gnome of the Night — Flying Squirrel | | JJ 50 |
| Guide to Happier Fishing | | AM 50 |
| Harnessed Hawks (Falconry) | | AS 48 |
| Hellgrammite — The Original Bass Bug | | ON 49 |
| Missing New Yorkers (Extinct species) | | FM 48 |
| Mother, Inc. (White-footed mouse) | | JJ 48 |
| Muskalonge | | JJ 47 |
| Red Squirrel | | DJ 49–50 |
| Snapping Turtle | | AS 49 |
| Three Poisonous Snakes of New York | | JJ 49 |
| Trout Lines | | AM 47 |
| Weasel | | FM 47 |
| Weasel Family | | DJ 47–48 |
| Wildlife in Winter | | DJ 46–47 |
| Wildlife Landlord — Woodchuck | | AM 48 |
| Woods Episode (Bear — Otter) | | FM 49 |


### LAKES


| | | |
|---|---|---|
| Ashokan | Barnett Fowler | JJ 48 |
| Black Lake | J. D. Bulger | FM 49 |
| Blue Mountain Lake | Roland B. Miller | ON 49 |
| Cayuga Lake | Dwight A. Webster | AS 49 |
| Champlain | Bob Bush | ON 47 |
| Chautauqua | Udell B. Stone | JJ 47 |
| Conesus Lake | Robert F. Perry | AS 48 |
| Cranberry Lake | Wm. D. Mulholland | A 46 |
| Hands Across Lake Champlain | J. Victor Skiff | JJ 50 |
| Indian Lake | Mrs. Harlan Fish | AM 48 |
| Kensico | Herman Forster | FM 47 |
| Keuka | Bob Bush | DJ 47–48 |
| Lake Erie | Wm. C. Sengbusch | AM 49 |
| Lake George | Fred Streever | AM 47 |
| Lake Ontario | J. Victor Skiff, D. H. Weeks, Udell B. Stone | FM 50 |
| Lake Placid | P. W. Fosburgh | DJ 48–49 |
| Long Lake | Roland B. Miller | ON 48 |
| Oneida Lake | Wm. C. Senning | DJ 46–47 |
| Otsego Lake | Louis C. Jones | DJ 49–50 |
| Piseco Lake | John Knox | JJ 49 |
| Ronkonkoma | Frank J. Mooney | FM 48 |
| Sacandaga | Bob Bush | AS 47 |
| Schroon Lake | Dwinal Kerst | AM 50 |
| Seneca Lake | Bob Bush | ON 46 |
| Survey Notes on Indian Lake | John R. Greeley | AM 48 |


### LAND MANAGEMENT


| | | |
|---|---|---|
| Centerville R. F. D | Reed Adams | ON 49 |
| Christmas Trees and Land Use | A. S. Hopkins | DJ 46-4 |

| | | |
|---|---|---|
| Farm Marsh for Muskrats | Arthur H. Cook | DJ 48–49 |
| Farm Pond for Trout | C. W. Greene | FM 49 |
| Farm Ponds | P. W. Fosburgh | ON 48 |
| Flash Flood | P. W. Fosburgh | AM 49 |
| Miracle on a Farm | Harold E. Klingaman | ON 49 |
| More Cover on Our Land and In Our Time (Pictorial) | | DJ 48–49 |
| PR–48–D | Ben O. Bradley | FM 49 |
| Rain | P. W. Fosburgh | AM 47 |
| Seashore Planting | Henry Reppa | AM 50 |
| The Old Farm Renewed | Harold E. Klingaman | AM 50 |
| There's No Detour (S.C.S. Districts) | Hugh Wilson | JJ 48 |

**LAWS**

| | | |
|---|---|---|
| A Look at New Legislation | | AM 47 |
| Big Game Season for Archers | Barnett Fowler | AS 48 |
| Firearms for Minors | P. W. Fosburgh | DJ 49–50 |
| Grist for the Mill | | DJ 47–48 |
| How We Decide on a Beaver Season | Arthur W. Holweg | FM 50 |
| New Legislation | | FM 47 |
| 1948 Legislative Hopper | J. Victor Skiff | AM 48 |
| Problems in Legislation | | DJ 49–50 |
| Summary 1948 Legislative Season (Supplement) | | AM 48 |
| Three New Proposals | | DJ 46–47 |
| To Pick or Not To Pick (Wildflowers) | E. W. Littlefield | AM 50 |

**MAMMALS**

| | | |
|---|---|---|
| Beaver | W. J. Hamilton, Jr. | FM 50 |
| Black Bear | Clayt Seagears | ON 47 |
| Chipmunk | W. J. Hamilton, Jr. | AS 49 |
| Coyote — Unbidden Guest | Clayt Seagears | AM 49 |
| Deer (See hunting) | | |
| Fisher | Arthur H. Cook | DJ 49–50 |
| Gnome of the Night (Flying Squirrel) | Clayt Seagears | JJ 50 |
| How to Draw a Mouse | Clayt Seagears | JJ 48 |
| Missing New Yorkers | Clayt Seagears | FM 48 |
| Mostly About Bears | Clayt Seagears | FM 49 |
| Mrs. Richards' Beavers | Mrs. A. M. Richards | ON 49 |
| Muskrat | Arthur H. Cook | DJ 46–47 |
| New York's Coyote Control Problem | Greenleaf T. Chase | DJ 49–50 |
| Opposum | Arthur H. Cook | AS 48 |
| Otter | Arthur H. Cook | FM 48 |
| Porcupine | David B. Cook | JJ 48 |
| Red Squirrel | Clayt Seagears | DJ 49–50 |
| The Cat Nobody Knows (Wildcat) | Clayt Seagears | DJ 48–49 |
| Those Little Mammals | W. J. Hamilton, Jr. | JJ 47 |
| Water Shrew | Walter J. Schoonmaker | AS 47 |
| Whitetail in New York | J. Victor Skiff | ON 47 |
| | Robert W. Darrow | DJ 47–48 |
| Why is a Skunk? | P. W. Fosburgh | ON 47 |
| Wildlife Landlord — Woodchuck | Clayt Seagears | AM 48 |

**MAPS**

| | | |
|---|---|---|
| Adirondack High Peak Country — Trails & Lean-Tos | | AS 47 |
| Attack By Air (Gypsy moth area) | Bureau of Forest Pest Control | AS 49 |
| A New Deal for Catharine (Creek) | Cecil E. Heacox | FM 47 |
| Canoes & Campsites | A. T. Shorey | JJ 47 |
| Cattaraugus County | Nick Drahos | AM 49 |
| Cayuga Lake | Dwight A. Webster | AS 49 |
| Champlain | Bob Bush | ON 47 |
| Chautauqua Lake | Udell B. Stone | JJ 47 |
| Conesus Lake | Robert F. Perry | AS 48 |
| Chenango County | Roland B. Miller, Nick Drahos | AS 49 |
| Cranberry Lake | Wm. D. Mulholland | A 46 |
| Deer Licenses, Take | | ON 47 |
| Delaware County | Nick Drahos | AM 50 |
| Ducks (Made in New York) | Robert A. Wells | ON 46 |
| Essex County | Nick Drahos | JJ 49 |
| Flying For Facts | Walt Crissey | FM 47 |
| Game Management Districts | | JJ 47 |
| Lake Champlain | | JJ 50 |
| Kensico | Herman Forster | FM 47 |
| Keuka | Bob Bush | DJ 47–48 |
| Lake George | Fred Streever | AM 47 |
| Lake Ontario | Clayt Seagears | FM 50 |
| Liquid Assets (Water for New York) | Clayt Seagears | JJ 50 |
| Long Lake | Roland B. Miller | ON 48 |
| Maps (U. S. G. S. and aerial) | D. G. Rankin, A. S. Hopkins | ON 47 |
| New York State Forest Districts | | AS 47 |
| New York State's Beaver Range | | AM 47 |
| New York's Three Deer Ranges | | DJ 47–48 |
| 90 Miles Down the Indian River | J. D. Bulger | JJ 49 |
| Oneida Lake | Wm. C. Senning | DJ 46–47 |
| Outdoors Map (Supplement) | | JJ 48 |
| Pollution, New York Harbor | J. R. Westman | JJ 49 |
| Pollution on Long Island | Alfred Tucker, Milton Bidwell | DJ 48–49 |
| Rensselaer County | Nick Drahos | ON 49 |
| Ronkonkoma | Frank J. Mooney | FM 48 |
| Sacandaga | Bob Bush | AS 47 |
| St. Lawrence, County | Nick Drahos | FM 50 |
| Seneca Lake | Bob Bush | ON 46 |
| State of New York Public Fishing Rights | | AM 47 |
| Suffolk County | Nick Drahos | DJ 49–50 |
| Sullivan County | Nick Drahos | FM 49 |
| Summer Sport — Fishing on Long Island | | JJ 47 |
| This Business of Pollution | Harold C. Ostertag | FM 49 |
| Those Aerial Photographs | A. S. Hopkins | ON 47 |
| Thousand Islands Bass | Udell B. Stone | JJ 49 |
| U. S. G. S. Quadrangles | D. G. Rankin | ON 47 |
| Water travel | Fred Everett | AM 50 |

**MISCELLANEOUS**

| | | |
|---|---|---|
| Adirondack Museum | Roland B. Miller | JJ 49 |
| Axe Gauge | David B. Cook | AM 50 |
| Bark Shanty on T Lake | | AM 49 |
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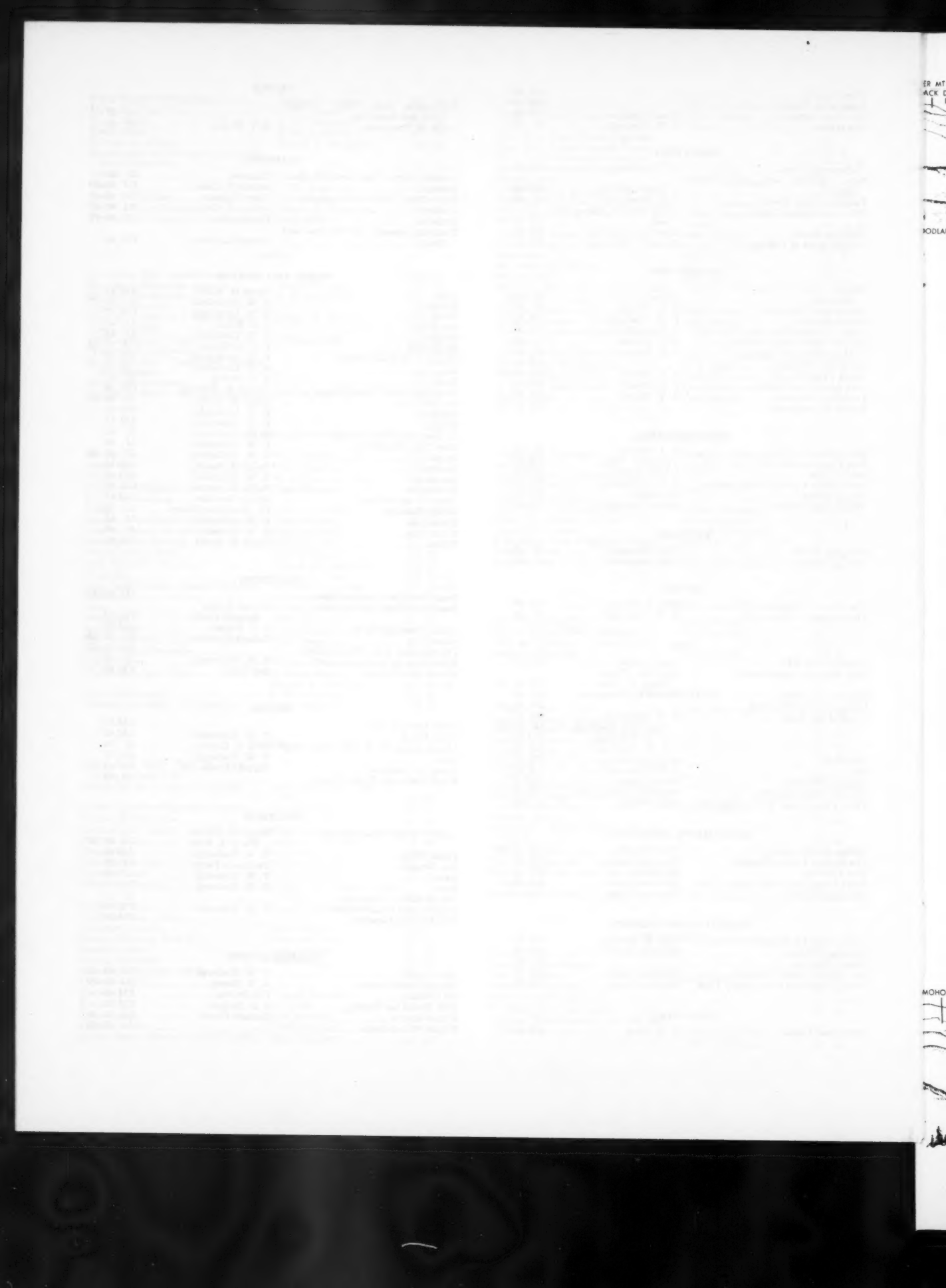

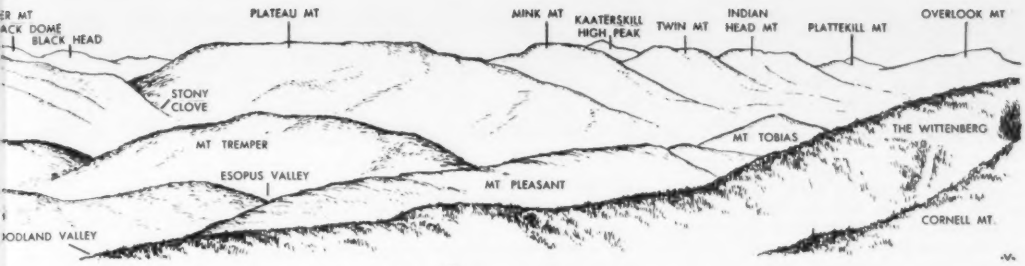


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# In Profile

THE Conservation Department maintains a trail to the top of Slide Mountain. This is the Wittenberg-Cornell-Slide trail, red marked. For easy travelling it is recommended that the start be made from Winnisook Lake, which can be reached by automobile from Branch or Big Indian. Starting this way, the hiker first comes to the top of Slide, where there is a Department lean-to, then passes just under the top of Cornell Mountain, then over the top of Wittenberg, then down to the automobile road in Woodland Valley. All together, it's a nine mile walk, requiring about six hours.

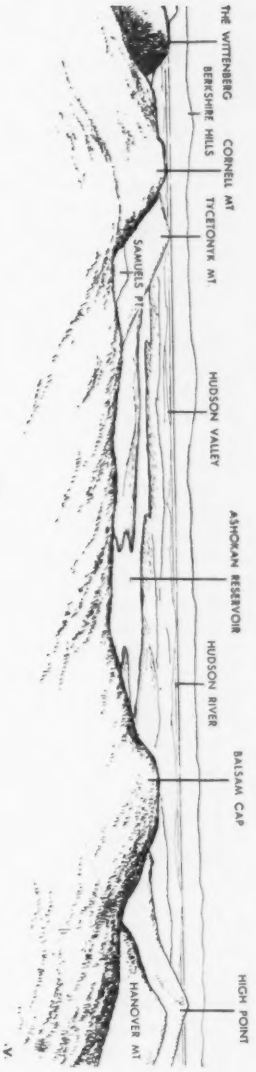
Slide itself is not a familiar sight to most people, since the high mountains around it obscure it from view. But Slide's 400-foot advantage over neighboring peaks makes the view from the top not only the most famous in the Catskills, but one of the most famous in the Northeast. The view extends to the Green Mountains in Vermont, the Berkshires in Massachusetts, the Shawangunk Range, the Hudson Highlands. More immediately, one looks down on Giant Ledge, Ashokan Reservoir and the Hudson River, and the headwaters of the streams from which New York City draws its water: the east and west branches of the Neversink, the Esopus, Rondout Creek.

Commenting on his panoramic profiles, Artist Voorhies wrote us as follows:

*I have made many sketches and watercolors from the summit of Slide, as well as a number of photographs, but when I decided to do the panorama I found that all my material was of little use. So I climbed Slide to do the job, but found that several trips were required since haze and local conditions prevented seeing everything at one time. It was finally completed, and double-checked with topographical maps.*

*I know of this having been done only once before; Van Loon did such a panorama in the 80's, but when I checked his work with the actual view I found he had "cheated" and left out the entire southwest sector—and then some.*

A careful study of Mr. Voorhies' work would seem to indicate that he hasn't left out anything.

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# ADIRONDACK DIARY

**This story of an Adirondack trip is from the diary of the late Rev. Henry Smith Huntington. A native of Rome, New York, he had just been graduated from the theological seminary at Princeton and licensed to preach in the Presbyterian Church when he made this trip. The diaries are the property of his daughter, Miss Adelaide Huntington, of Grand Rapids, Michigan, and were forwarded to us by Mrs. Alta Littell, also of Grand Rapids. The drawings are by Benson J. Lossing, who covered the same territory a few years later.** ***(Italics indicate editorial comment).***

**July 1, 1853**—Contemplating a long woods tramp for recreation, I did not desire to muster a very large company, as variety of opinion and much baggage would necessarily conspire to hinder dispatch. Accordingly B. H. Wright, Jr., (Benny) my cousin, and myself departed from Rome on Monday, June 27, at 3:00 p.m. for Schenectady and Moreau Station, north of the city and some 18 miles from Lake George.

We reached Caldwell's (*on Lake George*) about 11 o'clock, occupying the stage by ourselves. The fire-flies illuminated the landscape most brilliantly, particularly in those portions in the intervale sections slightly covered with a flowing fleecy mantle of mist, which in the night have the appearance of forest lakes reflecting the starry firmament in their calm depths. These valley fogs so deceived me that I pointed out Lake George in imagination to Benny long before we had arrived there.

Next morning at 9 o'clock we proceeded up the Albany and Montreal Road in our hired carriage, unwilling to wait for the afternoon stage that runs to Pottersville and Schroon. The road, though long constructed and lately laid with plank, (*now U. S. Route 9*) passes through a solitary and mountainous country of picturesque and sublime scenery. We came to Pottersville, 24 miles from Caldwell's, early in the afternoon—having dined excellently at Chester on the way. Here we had to have another conveyance to transport us that night as far as Root's Tavern, 17 or 18 miles north and situated near the junction (*at settlement of Schroon River*) of the Albany and Montreal Road and the one to the Adirondack Iron Works (*the old Cedar Point road*).

The Tavern was gained, after a long but very pleasant ride, before dark. It stands by itself in a wild looking country. Huge moose horns mounted on a neat pole adorned with gilt letters tell the traveller he is welcome there.

Mr. Root has about him a snug well tilled farm, plenty of workmen, a little store, a brook, a shed and several barns.

MOOSE HORNS.

He despatched us in good season Wednesday up the road to the Iron Works—as far as John Cheney's, 19 miles. Cheney keeps teams to accommodate the traveler to the Adirondack (*Upper Works of The McIntyre Company*). Here we dismissed the team and scraped an agreeable acquaintance with the sportsman. John's farm was presented to him by the Iron Company with whom he is an acknowledged favorite. Shortly the good housewife spread before us a most delightful and delicious meal of venison (tender as a three months' fawn) excellent bread, butter, maple syrup and tea, with a bowl of sweet milk.

B. and I bathed before breakfast Thursday morning in the Hudson River a mile above Cheney's. A saw mill, two or three houses, and a new public house unoccupied and unfurnished stand along the dam (*long since gone*). Near the new edifice turns off the famous forest road towards Newcomb town, Long Lake, and Carthage (*now Route 28N*). The river here is stocked with delicious trout.

Crossing the bridge, we at last fell in with a party engaged in repairing the road. Anthony Snyder was among them, the famous hunter who with John Cheney, his intimate friend and constant companion for 15 years, stands at the head of the Adirondack woodsmen. Taking up my rifle, he bid one of the workmen to chop off a strip of bark 4 inches square in a tree 25 rods distant; which done, he very coolly raised it to his eye without "a rest" and fired a ball through the centre! We prevailed upon the warm hearted enthusiastic hunter to accompany us over night.

We crossed the Hudson ½ mile wide above the dam and then followed a path over a wooded hill to the Pond. Corking the boat's bottom, we went to the shanty, tied up the dogs, and then lay out upon a marsh until dark for deer.

Friday we rowed down the Lake, crossed the portage with our packs, rifles and venison, and came to our boat on the Hudson. The river banks, being overflowed by the dam, were covered with innumerable dead cedars and hemlock, so as to retard boat navigation.

This afternoon we rode four miles along the Hudson to Lake Sanford. Here we shantied, examined a bear trap where a bear had recently got in but escaped with the loss of a huge claw and toe; and rowed up the Lake unsuccessfully trolling for pickerel with a "spoon hook."

**July 3, 1853**—As we rowed up the river Saturday towards the village (*Upper Works*) fine mountain vistas came in sight, among which Tahawus (*Mt. Marcy*) proudly towered loftiest. Here were scenes worthy of the studious contemplation of the painter and the poet. God's Mighty Hand seemed visibly outstretched in the vast forest livery of waving green, and the sombre solitudes of the mountains and the glen. Here and there reflected the azure sky in the bosom of some lonely lake, while the never ceasing waterfalls and the songs of joyous birds responded in nature's voices to the glory of our God.

It is 5 miles distant to Indian Pass (our present destination) from the Iron Works. The path is difficult and rough (*now State trail; yellow markers*); and is followed by continuing along the notch stream, one of the principal branches of the Hudson River (*outlet of Lake Henderson*). By and by we found steep ascents and thickest underbrush before us. Now the path wound around some broken ledges of rocks, hurled from the distant summit of Mt. McIntyre on our right, in wintry avalanches; or conducted us along the dizzy sides of a yawning precipice.

# 1853

My rifle soon encumbered me—although we got a partridge with it. The foot path runs through the notch (*now Indian Pass trail; red markers*) to Keene some 20 miles beyond, along which occasionally came a few laborers to work in the Iron Furnaces. We struggled on to find a convenient spot for lunch, where we could see the pass in all its grandeur. We found the travelling more and more toilsome, until it seemed almost vain to go any farther. We had, in fact, got below the mountain trail into the legitimate channel of the stream (*Indian Pass Brook*) which rippled around these vast piles of broken stone. Between these boulders the streams are of icy coldness, with large cakes of ice and even snow throughout the year! (*same ice still there*)—where the sun never shines. Not far from our bivouack we were told the snow was then from 3 to 4 feet deep, in July! (*That's right.*) On the left side of this ravine the cliff shoots upwards perpendicularly more than a thousand feet.

By 6:00 p.m. we reached the Iron Works village, and stopped at the store in the place to procure a few necessaries. The Iron Works are not now in operation (*National Lead Company now mining titanium*). At one time more than 100 men were there employed and the little village was alive with the din of trade. There are two factories—a mile apart; the new one has a mammoth chimney (*still standing*) of unnecessarily heavy masonry. The fires are to be kept alive by three huge bellows worked by steam. In front is the hearth where the melted liquid flows out.

The country round abounds with iron. The supply is inexhaustible—enough, says a report, for the use of the whole world! The first discovery of the metallic wealth of this country was made by an Indian—Benedict.

Another ore bed was discovered by Cheney, the hunter, for which and other services, the company presented him with his farm and house east of the Hudson. The Adirondack steel took the prize at the last year's world's fair at London!

Our Sabbath breakfast was of richest speckled trout, venison and potatoes, the best of which grow here.

**July 6, 1853,** Colden Lake—What charming scenery, thus to be shunned by man and living things! Tony had formerly seen game here. But now the well-beaten deer paths were a year old, and Tony thinks these beautiful creatures were hereabouts mostly destroyed by wolves last winter.

During the afternoon we left our pleasant shanty on Colden Lake. Fording the inlet of the Lake, and subsequently the swift current of the Opalescent, we reached the highest dam of the Hudson, 6 miles from the Iron Works and built by the Company. At the dam report said the trout were numerous—but we were too late to procure them. An easy footpath conducts you to Calamity Pond and an easier one to the village—where we arrived before sunset.

**July 7, 1853**—Preston Ponds are about 5 miles from the village. To approach them we had to row over a part of picturesque Lake Henderson (*now accessible by State Trail, Indian Pass to Cold River; red markers*), whose shores were thickly strewed with the bare stalks of the never-dying cedar and whose depths abound with noble salmon trout. Thence we continued by a long carrying place where I shot a brace of partridges, to the Preston Ponds. This is good fishing ground for delicate speckled trout, of which we took care to secure a mess to accompany our dinner of roast partridge.

The flies so harassed us that we were glad to fire some underbrush *(!)* as a smudge for self-defense. Cold River is shallow and swift so that it affords no navigation; otherwise it would be the most direct, and the nearest route to Long Lake (*now blue marked trail*).

Neither at our ambuscade nor upon our return did we see a deer; but Ben and the guide caught quite a string of speckled trout that were playfully leaping about the surface of the water between sunset and dark.

When we came to camp again we ascertained a visitor had suddenly been there and departed. Ben, going to the mountain brook besides our bivouack in search of fish that had been cleaned at noon and deposited there to preserve them from the heat of the sun in our absence, could not find them. A sly mink had pilfered our savoury treasures. These creatures will lug off all the fish they can find—and if their burden prove too great for one attempt, they will repeat it, till all is gone.

**July 8, 1853**—After baths and breakfast we departed for the dock of the Iron Works on the Hudson, where Tony had left a boat for us. We moved down the river, trolling vainly for pickerel, 11 miles through Lake Sanford, until we came to Tony's cozy nook of logs.

**July 9, 1853**—We all set off for Newcomb Lake (*otherwise known as Lake Delia*) 8 miles northwesterly. Poor Chester the teamster was so boozy from liquor obtained at the works, that Tony had to leave him behind with a sharp reprimand for his neglect of duty. I accordingly volunteered to drive to the Lake, while Seth Pearce and Tony crossed Lake Sanford to re-examine a bear trap.

We soon emerged from the verdant arches of the forest, into a cleared farm of elevated land. From the Newcomb farm (*now Finch, Pruyn Headquarters*) the view of the Adirondack group of mountains is very superior. A short drive through the woods beyond the farm brought us to the Lake (*Harris*). At the north end we "turned in" to an old shanty, after laying it with new fresh boughs.

Our hound, "Pilot," which we had brought with us to the rocky point, seemed anxious to be off—and when he was let loose he drove down a deer no less than three times before we could secure a shot.

**July 13, 1853**—Tony, Chet, Ben and I with our luggage started on the road to Long Lake via Pendleton, 23 miles from Snyder's. But now Tony thought he must leave us, and so, paying him at the rate of 2 dollars a day, half the wages of a Congressman with more than half the work, for 15 days which made a very comfortable sum, we took a new guide in the person of young, modest Harvey Bissel. Harvey is an ingenious lad and has built a clencher boat for Tony for the sum of 10 dollars. So launching the yellow shallop in the clear waves of Rich Lake not far from Bissel's we bade adieu to our companions and the poetic landscapes of the mountains.

A row of 10 miles up the lake, which has a lumber boom athwart it, and Crooked Inlet River, Lily Pad Pond and a tramp over 3 portages brought

ADIRONDACK VILLAGE.

THE IRON DAM.

us to the foot of Lower Catlin Lake. All about the Lake shore were numerous wolf tracks—though we did not meet any.

**July 15, 1853**—An early dinner being taken we went to the Lake head, where was a portage and a lumbering dam at the outlet of Round Pond. Landing on the edge of the pond we hauled up the boat for the guide to come after tomorrow, and with triply distributed packs we commenced to wind the tortuous mazes of an old trail. This was so checquered by oblique trapper's paths that we were more than once misled to our no small delay and uneasiness. The trail selected was one of Indian origin, dating back immemorably (*The "Old Military Road"*). It was two long weary miles before we came out to Long Lake, the first notice of which we had by the cries of the loon. We found we had reached the extreme northeast end of the Lake.

**July 16, 1853**—We saw a deer close by the shanty which we did not care to shoot as we had a good supply of venison. Our principle is not to take life unless we appropriate it to some proper use. Among the most noted hunters here, of whom are Cheney Chase, Caleb Chase (said to be the best shot) John Cheney and Snyder, when the sporting season is the best, some have got 7 deer a day and cleared 100 dollars a month. They are taken to the New York market. Deer pelts are worth about 25 cents a piece.

Tony had advised us to try the piscatory art near the mouth of Cold River, but even on famous Cold River we caught next to nothing, though we found a little way up stream the best log shanty fortune had thrown in our way. Its roof is low but snug and tight. It is probably 14 by 12 feet large. A huge stone fire hearth and chimney occupy most of one end. It soon seemed like home to us, although all about the solemn primeval forest presented its gloomy shades unrelieved by the sounds of human presence. At night the cries of the wolf, the loon and the owl echo through its leafy arches.

During a brief absence of an hour or two towards dark, my companions had fine luck in fishing a little way up the stream. They caught more than 20 pounds of the largest speckled trout I had ever seen; each one of which the guide thought must have weighed two pounds! He said he had seen speckled trout that weighed 3½ lbs! In the interim of this prodigous haul, I had lost all faith and patience and was amusing myself beside a crackling fire in the cabin over the Reveries of a Bachelor by the marvelous and contemplative "Ik Marvel."

**July 20, 1853**—This PM Benny went out with Eldridge to the East Inlet (*Raquette Lake*) for "night floating," while I, not wishing to be idle, engaged Billy Wood the cripple to paddle me to hunt deer in the South Inlet. Bill is a veteran huntsman, having sported in these woods for 29 years. He lost both legs below the knee from exposure to the cold while intoxicated, and still clings to the bottle! Add to this his deafness and the reader might suspect his availability as a guide. (*"Stumpy" Wood; in spite of wooden legs, held snowshoe record between Raquette Lake Outlet and Brown's Tract.*)

Billy promised me a fowling piece and soon rigged out a "junk." Equipped with powder, blanket, shot and pitch for the boat we left for the South Inlet, 6 miles distant, passing Big Island (*now two State lean-tos*), minor isles and the East Inlet.

As we neared the mouth of South Inlet, we arranged and completed the necessary preliminaries of lighting the candle (a mammoth one expressly for the purpose to which it was applied) and disposing the forward bow seat. The moon was happily often hidden by floating clouds, but the air was moist and significant of storms. In the distance, after we ascended from the inlet of the creek, we heard a deer blow and snort, to our discomfort. But better luck soon awaited us. For we had not advanced far, before my guide brought up the boat close to a noble buck standing to his waist in water and with his head turned from us. A sure quick charge with my piece at his head sunk him immediately—where it was 9 feet deep.

"Lost, lost!" I exclaimed; but was assured that he would rise to the surface in an hour or two, and so it turned out. Deer shot out of depth sink when in the red coat, but in the fall of the year when the hair turns blue, they float.

At the Raquette we found all our shot venison might be salted and safely transferred to Rome via township No. 4 and Lowville. The same night of my achievements Ben shot a fine doe in the East Inlet. Now Cyrus Wood is to pack down all our meat for home consumption.

We hunted again until day-break in South Inlet without getting one. Here a fortnight previous my friend Charley Hurlburt killed a cow and calf moose—the last of which it is said he might easily have caught alive as he was flounching about in the mire after its dam. When they first came to the old one they were disconcerted and puzzled what it was—mistaking her in their impetuous fright for a panther.

**July 22, 1853**—It is 40 miles from Raquette Lake to No. 4 township, and 19 miles to Lowville, making the whole distance nearly 60 miles. Sunset found us at Wetmore's neat farm in "No. 4." After supper we departed for Crandell's residence near Lowville.

BARK CABIN AT CALAMITY POND.

Darkness overtook us long before we reached our destination and the wagon rolled along in the gloom of thick forests. Once we passed a clearing of blazing brush that gleamed fitfully and mildly in the dim air.

**July 23, 1853**—We were up at 4 and on our course to Lowville—stopping at one E. Puffers' in Watson to leave our peltry to be tanned and wrought into gloves, etc. At Lowville we "staged it" to Irwin 11 miles in a Utica carriage. There we stopped until the Rome stage arrived.

# THE CLAM

**It's clambake time. Here's some information on what's getting baked in those pits**

WHEN we speak of clams in this State, our immediate inference is hard shell clams. But just mention clams to a Down-easter and he thinks you're talking about soft shell clams; he calls hard clams quahogs. The scientific name for hard clams is *Venus mercenaria*. This perhaps originated from the fact that the shells of hard clams were used by Indians as wampum, but in any case the scientific name simply means "Money-conscious Goddess of Love."

As far as I'm concerned, the Indians can have their wampum, the scientists their money-conscious Goddess of Love and the Down-easters their quahogs; I'll take hard clams any day of the week.

The hard clam industry of New York State centers in the bay waters around Long Island, and a part of Staten Island. As a natural resource, it gave employment during the year 1949 to some 2,500 individual diggers and an additional 500 shore workers and handlers in Fulton Fish Market. The total production of hard clams was 45,992,934 pounds, with a market value of $2,358,612.

Brackish water, which is in effect a combination of fresh and salt water, is conducive to the growing of hard clams; thus they are found in the waters of our bays rather than in ocean waters. When the water temperature reaches about 70° F. spawning takes place, with females discharging eggs, and males spermatozoa. These eggs are about 1/325 inches in diameter and are round. The spermatozoa are thread-like and are drawn toward the egg by a certain affinity; when contact is made, fertilization is accomplished.

This process of spawning may continue for two or three months. In Long Island and Staten Island waters, hard clams spawn when about three years old at which age they are a minimum of about one and one-half inches in length. They become better spawners, however, as they grow larger, but fall off after they have attained full growth or chowder size. The maximum age of a clam is about 25 years.

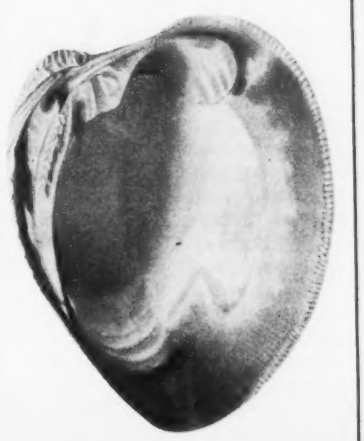
After the eggs are fertilized, the resultant larvae are suspended in water for some six to 12 days and are always in danger of destruction by sudden changes in salinity or temperature. Winds and tides wash them ashore. All kinds of sea animals feed on them, especially jelly-fish. And finally, when their swimming period is ended and they settle to the bottom, unless the bottom is suitable they are immediately destroyed. Soft mud, for instance, becomes a death trap, since the clams smother.

Having survived all these destructive forces, hard clams are now about 1/100 inch in size. By the aid of a small foot they are able to move short distances along the bottom, or dig into it. As clams grow larger their chief movement consists of going down into the bottom, especially in the colder months of the year when they will go down to a depth of some four inches; when warmer weather comes, they "foot" themselves toward the surface.

The clams that spawned earliest (about early June) attain a length of about ½ inch by November, and those that spawned later, of course, are smaller.

It has been pointed out that hard clams face many perils during the infant stages of life. Still greater ones lie ahead. Chief among these are blowfish, winkles, conchs, drills, starfish, horseshoe and blue claw crabs. As an example, Dr. M. R. Carriker at Rutgers University last May placed clams in various aquariums and found that six conchs in 23 days consumed 69 mussels and 20 hard clams. In another experiment, one crab consumed a clam a day.

*fauna*



Hard clams enter the market as little necks at between three to four years of age. This size is popular for clams on the half shell. Cherrystones are the next size, and are some five years old. This is the size commonly used for clambakes. Chowder clams as you buy them are probably from six to 15 years old.

Hard clams are taken commercially by many methods. Most frequently used are long handled rakes with curved tines (instead of straight teeth), and clam tongs which operate on the principle of a pair of scissors, with from 10 to 16-foot wooden handles.

Since there are many polluted areas in the Marine District, this Bureau every year supervises the salvaging of such clams, whereby they are transplanted to clean waters. After they become absolutely pure, they are thence marketed. From 1944 through 1949 there were transplanted slightly over 4,000,000 pounds of hard clams.

FEEDING habits of clams are little known and are still under investigation. It is known, however, that they feed on minute plant forms known as diatoms. They also feed on larvae and other microscopic forms, depending on the location and the season of the year. Whatever their diet, hard clams produced in this State are a source of vitamins and have been proven by analysis to be extremely healthful and nutritious. They contain a high percentage of protein and glycogen and are exceptionally rich in manganese, copper and iron.

The Department's Bureau of Marine Fisheries takes endless precautions to the end that all hard clams produced in this State meet the highest standards of purity. So the next time you purchase hard clams, or perhaps attend a clambake, ask if the clams came from Long Island or Staten Island. If so, you have the assurance that the waters from which they originated are pure, and that the wholesale plants in which they have been sorted and processed are continuously inspected by our Sanitation Unit. Because of this, all wholesale shellfish dealers in this State are certified by the U. S. Public Health Service to engage in the distribution of hard clams anywhere in the United States. That's something to be proud of.

—ALFRED TUCKER, *Superintendent, Bureau of Marine Fisheries*

# upper

UPPER Saranac Lake is, of course, located in the Adirondacks in the southwestern part of Franklin County in the Townships of Santa Clara and Harrietstown. It is about eight miles long and varies in width from a quarter mile in the "Narrows" to about two miles at the upper and lower ends. The total area is over eight square miles, and the elevation is 1,571 feet above sea level. The fairly abrupt drop-offs from the predominantly rocky shores result in a large proportion of deep water, with a maximum depth in the southern end of well over 100 feet.

The main tributaries are the "Inlet", which is formed by the combination of the outlets of Little Clear Pond and Lake Clear, and Fish Creek, which drains a network of about 40 ponds from the west. The level of the lake is controlled by a dam at the southern end; the outlet becomes the Saranac River, flowing through Middle Saranac Lake (or Round Lake as the natives know it), thence through Lower Saranac Lake and on to Lake Champlain.

The first recorded settler was Jesse Corey who established himself at the southern end of the lake there about 1830. This settlement was followed by the building of "Bartlett's", on the carry between Upper and Middle Saranac Lakes, and then by the "Wawbeek Hotel" on the "Sweeney Carry"—(an alternative route from Upper Saranac to the Raquette). Then, towards the turn of the century, came the founding of one of the largest hotels in the northern Adirondacks—Saranac Inn. We wonder what Mr. Corey would think were he to see this hotel with its 500 rooms and 18-hole golf course, to say nothing of the many impressive private camps along the western side of the lake? Chances are he would prefer to row his guide-boat along the eastern shore, where several miles of State land have assured the preservation of a comparative wilderness. Or he might prefer to climb Boot Bay Mountain and drop down to Black Pond, to look over the beaver houses there. Anyway, Mr. Corey would see the same mountain peaks beyond each end of the lake—St. Regis to the north and Ampersand to the south. (But the fire towers might puzzle him.)

The fish population of Upper Saranac is both large and varied. Considering the number of competitive species present, the lake is very productive. Lake trout, whitefish, smelt and smallmouth bass provide most of the fishing, but an occasional landlocked salmon peps things up a good deal, and then of course there are plenty of perch for the youngsters (or the frying pan).

But probably most of the fishing effort is expended upon the bass. The rocky shores with occasional fallen trees provide fertile territory for either bait or fly rod fishermen, and the bass fishing is good! Within the last couple of years a few largemouth bass have shown up (apparently the fry came down Lake Clear Outlet).

Northern pike are fairly common, particularly around the mouth of the inlet where the water is shallow and there are sizable weed beds. The pike grow to a fairly large size—ten to twelve-pounders being not uncommon, with the average probably around five pounds. The most commonly used lure is a spoon of the "Dardevle" type, although of course bass plugs and other lures are effective on occasion.

SMALLMOUTH bass notwithstanding, Upper Saranac is best known for its lake trout fishing. It is certainly one of the best lake trout lakes in the State, furnishing consistently good fishing year after year. The trout average about five pounds, with fish over ten pounds fairly common; the largest on record was one weighing thirty-one and a half pounds taken in 1936 by a Mr. Doty of Saranac Lake.

A large proportion of the lake trout are caught with the so-called jerk-line (usually a metal line) and some type of silver or brass spoon, preferably with a strip of lake trout belly trailing on the hook. Adirondack guide-boats are used by most of the natives, rowed very slowly so the lure will be trolled nearly on the bottom. A few of the more indolent individuals prefer to anchor to a buoy and dangle a minnow or smelt at the depth at which they think a lake trout will wander along. This method also allows the fisherman to try his luck for whitefish at the same time. For this, a hand line is used, usually an enamelled line with a sinker and one or two snelled hooks baited with a piece of cut fish. Perch or suckers usually furnish the bait.

Up until about 15 years ago excellent catches of the common whitefish were made in this way. Up to one hundred per day were taken by three persons in a boat, the average weight being two to three pounds but with an occasional six or seven-pounder showing up. Probably due to the combination of an excessive take and the influx of a competitive species of whitefish—the lake herring or cisco (which unfortunately will not bite)—the fishing for whitefish is now only fair.

When winter comes and the lake freezes up, another group of fishermen take over: the ice fishermen. A few try their luck for great northerns, but most of them are after smelt. They usually operate in shanties with from four to eight holes through the floor. These shanties are equipped with a wood, coal or oil stove and really afford fishing in comfort, but still there are a few hardy souls who shun them and brave the wintry blasts, fishing in the open, usually perched on an orange crate or some similar box. The smelt in Upper Saranac do not attain the size of the larger strain found in Lake Champlain, but average from eight to nine inches.

Speaking of fishermen leads us to

# saranac lake

an unfailing source of them—the Fish Creek campsite. This is located on Fish Creek Ponds, only a few minutes down Fish Creek by boat from Upper Saranac. With its hundreds of campsites and thousands of campers annually (most of them fishermen) it follows that the fishing pressure on Upper Saranac is far from light.

Two miles north of the northern end of the lake is the Adirondack Fish Hatchery. This is definitely associated with the lake since lake trout, whitefish and landlocked salmon eggs are procured each year from this source. The salmon breeders are not captured in the lake itself but on the way up the inlet to spawn, in a weir below the junction of the hatchery outlet and Lake Clear Outlet. The wild lake trout and whitefish breeders are taken in pound nets in the Gilpin Bay to Wawbeek area, near the southern end of the lake. The eggs are taken at the point of capture and the breeders are returned unharmed to the water. The take of both whitefish and landlocked salmon varies markedly from year to year, but the take of lake trout eggs is definitely consistent —from 500,000 to 750,000, with an average of about 600,000 per year. Naturally, a good percentage of the lake trout fingerlings hatched and reared from this source are returned to the lake. This should guarantee a perpetual supply of eggs for propagation —and also continued good fishing.

It's a matter of opinion, of course, but right now is about the nicest time of year on Upper Saranac.

—Charles R. Deuel,
*Hatchery Foreman*

# FERTILIZATION

## *is it the answer to the fishermen's prayer?*

FIVE centuries before the birth of Christ, a Chinese Mandarin sat down and with a brush inscribed the first discussion of the culture of fish in ponds. The first farm fish pond program was in operation in the Orient even before that time. These are only two of the many facts indicating that the development of the principles governing the growing of pond fish was first confined to Asia, spreading to Europe only in the Fourteenth Century.

Concerning European pond culture, the literature contains references to practices such as the feeding of sheep manure and the seeding of pond bottoms with vetch, beans or barley which, with the exception of the barley, were plowed under while green, after which the bottom was flooded. The significance of these procedures was not understood, but the increased production in the ponds receiving this treatment was recognized. In other words, fertilization worked, but nobody knew why.

It was not until a clear explanation of plant nutrition was developed—and correlated with the effect of fertilization in increased production of *field* crops—that the possibility of the existence of a similar relationship between pond production and plant food substances was realized.

European pond culture was mainly confined to the raising of crops of pond fish such as carp, which utilize both animal and vegetable foods in growth. But most of the work in America has been with the so-called game and pan species, which feed predominantly on animal foods. As applied at our hatcheries, fertilization was first confined to ponds in which plankton crustacea were grown, to be removed as needed for fish food. Later, these food cultures were developed directly in the pond, after which the young fish were introduced. Fertilizers were mainly organic and included such materials as hay, mussels, green grass or straw, cottonseed or soybean meal and manure of animal origin.

Then came inorganic fertilizer. Somewhat over a decade ago, Swingle and Smith succeeded in making three pounds of fish grow in southern ponds where only one grew before—by using commercial inorganic fertilizer containing phosphorus, nitrogen and potassium. As a result of the popularization of this work and the impetus given it by the farm fish pond program of the Soil Conservation Service, fertilization of ponds has now become a subject every fisherman has heard about and on which he may have more or less pronounced viewpoints.

An unfortunate result of the publicity given fertilization has been an increasing tendency to standardize fertilization procedures, with no particular attention being given to the waters involved. But waters may be widely divergent chemically. Even within a state, waters of different regions are not similar, and a routine application of fertilizer according to a basic formula can be expected to produce variable results. In the South, in fully managed ponds that can be drained and the fish populations adjusted, routine applications have been accepted and used widely in the farm fish pond program. In general, the results have been both predictable and good. Consequently, sentiment has developed for the application of the same procedure to *natural* lakes and ponds, and experimental work is now being carried on in several states to determine the practicability of such a program.

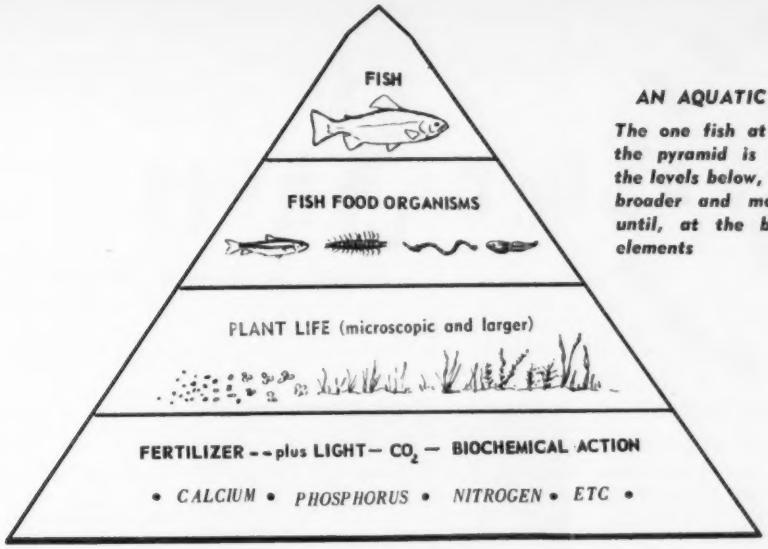
But fertilization of water is similar to fertilization of land; both are expected to increase production by supplying those substances which—either absent, or present in inadequate quantities—are limiting production.

In any case, increased growth of vegetation is the major objective in soil fertilization. But is only incidental in the production of an increased crop of game or pan fishes. Following inorganic fertilization, a profuse growth of microscopic plants, called phytoplankton (including green algae) usually develops in the water. While some food organisms utilize these directly, the crops of greatest importance to fish production are forms known as zooplankton or microcrustacea, which feed on bacteria and bacterial sludge produced in the decomposition of the plant debris. Bacteria produce active decomposition of the algae and tend to grow in direct proportion to the available organic matter. It follows that with the use of organic fertilizers, zooplankton may be produced in large numbers and increase fish production without the algae "blooms" typical of inorganic fertilization.

It is worth mentioning, however, that in some lakes and ponds in this State algae growth is often so great naturally that fish are killed by low oxygen; the algae die, and in the process of decomposing reduce the oxygen supply. Thus it is not surprising that kills have been reported in artificial ponds where fertilization has been employed, and where growth of algae has been stimulated thereby.

Lime is sometimes recommended for use with fertilizers. In addition to adding calcium and "hardening" the water, lime increases the fertility by releasing nutrient materials absorbed in the bottom sludge. But this may result in overfertilization, through biological processes requiring oxygen, thus decreasing the oxygen content of the water, reducing fish production, and occasionally even contributing to a fish kill.

In addition to lime, carbohydrate material is frequently recommended. It is necessary for the development of certain bacteria needed to maintain the fertility of a pond and to produce the proper growth of microcrustacea. The greater effectiveness of organic fertilizers in some waters is assumed to be due to the presence of carbohydrates, which are not contained in inorganic fertilizers such as the common "commercial" types. The higher productivity of streams in agricultural regions, compared with those of the wooded mountain sections, results from the fertilizing materials carried to the stream by runoff from the richer agricultural lands.


FISH
FISH FOOD ORGANISMS
PLANT LIFE (microscopic and larger)
FERTILIZER - - plus LIGHT — $CO_2$ — BIOCHEMICAL ACTION
• CALCIUM • PHOSPHORUS • NITROGEN • ETC •

***AN AQUATIC PYRAMID***

***The one fish at the peak of the pyramid is supported by the levels below, which become broader and more simplified until, at the base, are the elements***

In other cases, run-off is likewise a decisive factor; new impoundments of water covering grass lands are highly productive for a few seasons due to decomposition and decay of vegetation, but they eventually decline and reach a balance determined by regional run-off —and by their storage capacity.

With regard to storage capacity, it is obvious that fertilization of a pond requires more than the application of a certain amount of fertilizer in proportion to the water volume. True, this relationship has definite importance in newly made farm ponds, especially if the bottom is composed almost entirely of the infertile subsoil. But it would be considered poor economy to fertilize a field without an analysis to determine what nutrients were needed, and the same applies to the fertilization of water. The natural nutrients in ponds are derived from the soils of the region, and while bottom sludges act as a reserve supply, there is a tendency for them to be deficient in the same substances lacking in the soil. Unfortunately, analysis of pond water will give varying results, according the subsidence of an algal "bloom", a change in the state of the chemicals present, and changes in acidity or alkalinity at different seasons—all of which makes it difficult to evaluate the fertility of a pond and to estimate the amount and type of fertilizer to be added. Yet such an estimate must be made before fertilization can be employed with any certainty of gaining the desired result.

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It cannot be expected that fertilization of northern waters will produce results equal to those achieved in southern ponds. The higher temperatures in the South provide a higher rate of food conversion, and besides, the growing season is much longer. In the South the ponds do not freeze, and therefore a higher degree of fertilization may be carried out without danger of deoxygenation—since the ponds are always open for surface aeration. In the North the decomposition of a heavy "bloom", sealed in by ice and snow, may deplete the oxygen and result in a winterkill. This is particularly true in natural lakes and ponds where slow decomposition of the organic material in the bottom requires a certain amount of oxygen, even at low temperatures.

Michigan has recently conducted an experimental fertilization of warm water and trout lakes. Similar unfertilized lakes served as controls, or bases for comparison. Fertilizer was added in a ratio indicated by regional soil analysis. Application over two successive years resulted in an increase in fish growth rate, but apparently less successful reproduction. In both the fertilized lakes winterkill occurred the second winter, with no kill in the lakes used as controls. While smaller applications may avoid this trouble, it is obvious that a great deal of information must be obtained before such treatment will be safe or can be recommended. Furthermore, fertilization of other natural waters has occasionally resulted in coarse species gaining ascendency over the more desirable pan and game species.

German pond culture provides a wintering pond separate from the growing pond, thus preventing the high fertility of the latter from contributing to winterkill. But in this country a single pond serves all purposes, and in this respect corresponds to a natural water. To insure wintering-over, a lesser degree of fertility is indicated for northern waters than is satisfactory in the South.

Bass and warm water species do not require as high oxygen levels as do trout. These oxygen levels are affected by the action at green plants which *produce* oxygen only in bright light, and *require* it at night and on dark days, at which time, therefore, the oxygen content of the water is lowered. Warm water species may be able to tolerate such an oxygen reduction, but fertilization to increase the rate of growth is not recommended for trout ponds. A safer increase in growth can be produced by putting the money which would be required into a supplementary food supply.

IT is well established that fertilization will usually result in doubling or tripling fish production, and it may in the future prove invaluable as a tool in fisheries management. But at present its greatest use is in starting newly made ponds which have no natural fertility. Even here its use in northern waters would seem to require care to prevent frequent application from combining with the residual fertilizer content to produce overfertilization and subsequent winterkill. Everything considered, it is believed the dangers exceed the possible benefits in routine application to trout ponds. As a treatment for natural ponds and lakes, the danger of an upset in the established balance (with a resultant increase in the undesirable species) and the danger of winterkill, have materialized too frequently to justify its present recommendation.

—G. E. Burdick,
*Senior Aquatic Biologist*

# Scatter Shots

. . . NOTES OF GENERAL INTEREST

## MEMORIAL TO POWELL

A State plantation in Lewis County Reforestation Area No. 14 has been dedicated to the memory of one of the Department's most loyal and effective District Foresters. A bronze plaque on a boulder marks the plantation as the Grant M. Powell Memorial Forest, in honor of the man who was the first District Forester of District No. 6, with headquarters in Lowville and including the Counties of Lewis, Jefferson and Oswego.

Mr. Powell was born and raised in Cortland, graduated from the New York State College of Forestry in 1924 and got his master's degree from Harvard School of Forestry in 1925. He entered the Department service in 1931 and served as District Forester for 17 years. He died two years ago.

The ceremonies were attended by a large number of his friends in forestry. The dedicatory address was given by Arthur S. Hopkins, director of the Division of Lands and Forests.

## IT'S UP TO YOU

Early in July, two sportsmen discovered a set line 750 feet long extending almost all the way across Hemlock Lake. They promptly reported their discovery to District Game Protector Moore, in nearby Rochester, who with equal promptness organized a group of Protectors and Specials to handle the situation. The violator was apprehended in the act of hauling his line, and paid a fine of $202.50.

This case was fully and ably reported in the *Rochester Democrat and Chronicle*, in a column written by Howard Kemp. We should like to call particular attention to Mr. Kemp's closing remarks:

"It was one of the stiffest settlements of the kind on record at the Rochester office, and Protector Moore marked up one big assist to the two sportsmen who made it possible. In the interest of better hunting and fishing, we need more sportsmen of the same type."

## POP-EYED CATFISH

On May 17 Mr. S. Bellmon, 228 North Pearl Street, Albany, was fishing for catfish in the Hudson River at the Port of Albany. The Hudson River catfish resemble bullheads but have a forked tail. Their eyes are usually small, but what Mr. Bellmon pulled up looked more like a frog than a catfish; it had eyes as big as a nickel.

Although possibly blind from this abnormality, the fish didn't seem to mind, as he was in excellent condition and showed no lack of food.

## THE BLIND

A law passed at the past session of the Legislature authorizes the issuance of free fishing licenses to the blind. At the latest count, 23 such licenses had been issued.

First to apply in our New York City office was a Mr. George Parker, 67 years old. He lives in Brooklyn but is employed in the Industrial School for the Blind in New York City, where he instructs other blind persons in handicraft. Applying for his license, Mr. Parker said he thought fishing was a wonderful sport, and that he nearly always made it to the meetings of his local rod and gun club.

## HATCHERY WORK

Apropos "Postwar Reconstruction for Fish and Game" (last issue) completion of several of the projects has been reported by the Engineering Unit of the Division of Fish and Game.

The new central refrigeration and storage plant at the Rome Hatchery is in operation. This is a story-and-a-half structure, 26 by 70 feet, and includes an airlock, holding room, low temperature room, machine room, work room and prepared food cooler, with stairs leading to an overhead storage room. Storage space is provided for from three to four carloads of fish food, to be bought in the early fall when prices are low, and it will result in a saving of several thousand dollars on the food bill. This plant will also furnish storage space for tons of coarse fish collected by the Department's salvage crews for use as fish food at the hatcheries. From this central plant fish food will go out to the other hatcheries which are equipped with refrigeration rooms.

The modernization of the Seth Green Hatchery, founded at Caledonia in 1870 by Seth Green and the nation's oldest, has been accomplished with the construction of nine concrete rearing ponds 15 by 50 feet in size, the building of concrete walls and enlargement of existing ponds to make four rearing ponds, laying of access roads and resurfacing of existing drives.

The improvement of The Adirondack Hatchery at Saranac Inn has also been completed. Construction of twenty-one concrete rearing ponds 15 by 50 feet, with pipe lines for water supply and drainage, were included in this work.

The Crown Point Hatchery project, where the work has been done by the Department's own force, has likewise been finished. Ten rearing ponds, three circular ponds, fencing, additions to the existing building to provide for an office and laboratory facilities, improvement of the grounds (including rip-rapping and grading), macadamizing the access drive and improvement of existing drives—all have been completed.

## AXE GAUGE (AT LAST)

In an article entitled *The Care and Use of the Axe* (February-March 1950), author and axeman Dave Cook crawled out on one of the longest and shakiest limbs ever scaled by a member of the Bureau of Forest Management (which habitually regards such limbs as an indication ot just plain bad management). In his article Brother Cook stated that in order to keep the proper edge on an axe, there should hang, beside every grindstone, a gadget known as an axe gauge.

Came the deluge. As letters poured in requesting information about axe gauges there began a mad, international search for some, and it soon developed that just about the only good specimen of this gadget to be found anywhere hung by a grindstone in a musty cottage in the back hills of Rensselaer County, the proprietor of this establishment being, of course, none other than Brother Cook himself.

But Brother Cook has met this problem squarely. He has had 200 gauges made, complete with leather case, at his own expense. He is willing to part with them at 50 cents each (no stamps, Confederate currency or Occuption Marks, please), but even so, Mrs. Cook is reported to take a dim view of this business enterprise: no doubt her husband has embarked on more unprofitable projects, but she doesn't remember when, etc.

We're definitely not in the advertising business. But judging by our mail a lot of our readers want axe gauges, and it looks like there's only one place to get them.

Over to you, Brother Cook.

## MT. DEFIANCE

Of interest to those who just like to look at New York State is the announcement that the highway to the summit of Mt. Defiance at Ticonderoga is open. Mt. Defiance overlooks old Fort Ticonderoga, Lake Champlain, Lake George outlet and Ticonderoga Creek. Immediately across the way is Vermont.

"Historic Mount Defiance, Inc." is accomplishing the preservation of this site. In addition to the two-lane, 18-foot wide gravel toll highway (to be black-topped later), a summit house, lookout platforms and parking lot will be built this year. The long range plan calls for construction and maintenance of a park covering nearly 300 acres and including South Mountain; a trail from Mt. Defiance to South Mountain will take visitors to another observation point to see more of Lake George.

Rebuilding of the old military road up Mt. Defiance and opening of the highway to modern transportation is being accomplished on the 173d anniversary of the ascent of the mountain by the troops of General (Gentleman Johnny) Burgoyne.

## FISH FOR KIDS

The Bureau of Inland Fisheries' salvage crews, busy as they are with a heavy program of salvage and transfer work, have been able to sandwich in some netting to supply fish for "kid fishing derbies."

Fish were supplied a recent derby at Hiawatha Lake, near Syracuse, partly from a private pond whose owner was kind enough to permit netting, and partly from a pond in the Happy Valley Game Refuge. In addition, the crews are furnishing fish for the derby in Utica later this month, for another coming up at Park Lake, Newburgh, for the Orange County Y. M. C. A. pond and for waters adjacent to the Department's Conservation Education Camps.

Earlier this year, the salvage men stocked a number of New York City lakes with a good supply of kid-size fish.

## WHAT PRICE JAIL?

Down in the Bureau of Law Enforcement's Binghamton District, a certain young man was taken into custody by a Game Protector, charged with a hunting violation. He refused to pay his fine of $20 and was therefore committed to the Delaware County jail which, unfortunately for him, had no other occupants at the time.

The jail has an extensive lawn in front of it. When the young man in question discovered that the prisoners were required to mow this lawn, he telephoned his mother to bring over the money for the fine.

## WARNING

Up until the middle of July New York State had experienced one of the most satisfactory fire seasons of any time during the last decade. There have been roughly 900 fires that burned approximately 6,000 acres, or an average of less than seven acres per fire.

There is a continuing occurrence of fires, however, in the northeastern and eastern Adirondacks—not an excessive number, but enough to indicate dry conditions. (Normally these areas have only occasional fires at this time of the year.) In fact, drought conditions continue across northern New York State —in the eastern half more so than in the western.

So: Put out your smokes; break your match in two; drown your campfire and use care in burning; never burn slash, grass, leaves or brush in unusually dry, hot or windy weather.

## ROTENONE

A new Adirondack restoration project has been started by the Department's Bureau of Fish and Wildlife Investigations. It involves experimental work to develop effective methods of controlling populations of yellow perch and other undesirable fish—a serious problem in many Adirondack trout waters.

A number of waters have been selected and are in the process of being treated with rotenone (see April-May 1949). The objective is to destroy the undesirable fish so that the waters can be stocked with trout and returned to their original status as trout producers. Stocking will be done this fall.

This method has given excellent results in several previous experiments in this State, and has also been used successfully in a number of other states.

## ZEBRA TROUT

The specimen above was caught in Fall Creek near Boonville and was submitted to the Conservation Department by the lucky angler, who, unfortunately, didn't leave his name. To say he was lucky is perhaps far-fetched, for the trout isn't very large, but it does have the unusual distinction of being a hybrid between a brook trout and a brown trout.

Such hybrids rarely occur in nature and are remarkable for the zebra-like markings. They do not have red spots, although both the parent species do.

## VACATION NOTES

Vacation-wise, and viewed from our own perspective, the summer season has had its up and downs. Registration at Department campsites has so far been about 20 per cent less than last year, presumably because of cold and wet weather at the start of the season. In spite of this, some of the better known campsites have frequently had the no vacancy sign out, and given a break in the weather it's expected that total enrollment for this year will exceed that of last. Attendance at two new campsites should swell the total; the one on Long Island, in Lake George, is going full blast, and Little Sand Point at Piseco Lake should be ready late in August. (The new Rollins Pond campsite, west of Fish Creek Pond, probably won't be finished in time for use this year.)

Weather hasn't bothered the paddle people, or the hikers. A steady stream of canoes has been plying the 102-mile Old Forge to Saranacs route, and in both the Catskills and Adirondacks the Department's foot trails have been worn a lot deeper this year than last. The hikers don't have much to worry about, but to canoeists the Bureau of Camps and Trails issues this warning: Better take a tent; the shelters en route may be pretty crowded.

## BALMY PHEASANT

Out at the John White Game Farm, near Basom, there is a cock pheasant that's doing a lot of road work. Every time a vehicle leaves the service area for the rearing field, the pheasant takes off in full pursuit, pounding along at a mad gallop. When the vehicle stops, the pheasant flaps its wings and crows. Same thing on the return trip. Maybe ten or twelve of these excursions a day.

Foreman Blew of the Game Farm doesn't pretend to know what this is all about, but of one thing he's certain: the pheasant will be in top physical shape by hunting season.

## BLACK DUCKS

The propagation of black ducks—a Department project in operation before the war but discontinued during it—has been resumed on a small but eminently successful scale.

During the spring, men from the Bureau of Game Farms collected eggs from five wild nests and succeeded in hatching all but the infertile ones. Rearing was equally successful. The result is that there are now 54 black ducks at the Delmar Game Farm to serve as a nucleus for expanded operations next year.

## EARLY PROTECTORS

Above at the left is Mr. Thomas Allen (father of Game Protector Joseph Allen of Nassau County) who was a Game Protector from March 16, 1911 to January 13, 1929, and Mr. William Cramer, Game Protector in Nassau County from January 11, 1917 to September 29, 1929. They had just returned from patrol at the close of the last open season on deer on Long Island in 1929. Cramer was killed in line of duty; he was checking some hunters when he received a shotgun blast in the face.

Two other Protectors have been killed in line of duty: Samuel S. Taylor, near Rome in 1914, and John H. Woodruff, in Schenectady in 1919.

## MINK FOOD

There are 531 licensed mink ranchers in this State. In recent years, many of them have been feeding poultry wastes (head, feet and entrails of chickens) as a substitute for horse meat, thus effecting a considerable saving.

It has been observed, however, that breeding failures—in some cases, as high as 90 per cent—have resulted from the feeding of this material to mink. The Fur Animal Experiment Station at Saratoga, a branch of the Bureau of Animal Industry of the Department of Agriculture, has conducted extensive studies of this problem in co-operation with Dr. Robert Enders of Swarthmore College, and the investigation has turned up some interesting facts:

Quite recently a drug, *diethylstilbestrol*, has found increased favor with the poultry industry for chemically sterilizing male chickens. It is injected as a pellet in the neck of the bird, and by inhibiting growth of the sex organs it increases the weight of the bird without a corresponding increase in food consumption. Frequently, this pellet is not completely dissolved by the time the bird is killed for market, and so traces of the drug are often present in the waste products. If such waste is fed to mink, particularly kit females, it can have a disastrous effect on future reproduction.

A full report on this investigation is available by writing to our Bureau of Inland Fisheries and Special Licenses.

## BASKETMAKERS USING BEECH

Dave Cook (of the Albany office of the Bureau of Forest Management) has recently completed a survey of all the basket plants in the State, and he reports that here at last is an industry that has many a kind word for "problem species" of trees.

The makers of agricultural baskets—bushels, half bushels, etc.—all use beech and like it. Not only is the price more favorable than for other species but the wood is technically good and the yield better. The superintendent of one big plant said that ideally he would like to have 80 per cent beech and 20 per cent elm (for bands) or, failing that, 100 per cent beech.

Current prices for beech are around $50 Doyle (scale) delivered at the mill.

## NETTED

The law states that gill nets used by commercial fishermen in Lake Erie may not have a mesh smaller than three inches, but a recent investigation by Protector Zentz of Mayville indicated that this law was being disregarded on a large scale.

A special detail of Game Protectors was accordingly organized. As a result 29 cases (involving six boats) were settled, at a total cost to the defendants of $1,175 in fines.

## LOST YOUR PIGEON?

Investigating bird life along the crest of the eastern escarpment of the Catskills early in June, Bob Bauer and Nels Zeitler of the Division of Fish and Game discovered a falcon's nest with two fledglings 100 feet below the top. With some difficulty Bauer lowered himself on a rope to the nest. In it, among other things, he picked up 23 leg bands from racing pigeons; the falcon family had been living on squab.

One band was dated 1937. All, of course, were returned to the owners.

# For your Information

## FOREST PRACTICE NOTES

District 1 (headquarters in Oneonta): The Soil Conservation Service sponsored a wood chipper demonstration at several farms in Otsego and Delaware counties. Green wood or slabs can be converted quickly into a product ranging from coarse sawdust to large wood chips. Such material is well suited for bedding for farm animals. The chipper is also useful for brush disposal. The machine can be powered by jeep or tractor. (See page 38, Woodchipper).

An interesting operation in District 1 has been a thinning of red pine; the County Highway Department bought the cut trees to use as highway posts after preservative treatment. Price for peeled red pine was 35¢ with a 6-inch top.

District 2 (headquarters at Norwich): The demand for hardwood lumber has greatly increased, with all species moving and the price trend generally upward. This should aid in completing the cutting of many marked stands which have not been touched due to the high percentage of beech and soft maple.

District 4 (headquarters in Bath): Co-operators planted their largest total number of trees during the 1950 spring season; 76 co-operators planted 755,000.

District 5 (headquarters in Jamestown): Timber in good demand, with stumpage prices higher than last year. Cherry was emphasized in the spring furniture markets so that cherry stumpage is the highest it has been since the war. No. 1 cherry veneer logs bring $100-$150 delivered. (One sawmiller in District 3 incidentally, claims that he cannot afford to cut cherry lumber; the veneer people will pay him more for the logs than he can get out of the lumber.)

District 8 (headquarters in Herkimer): Considerable time has been devoted to preparing cutting regulations for private lands in Township 8, Town of Webb, Herkimer County. Cutting regulations are subject to the restrictions of the covenants of the Webb Deed, which provides that the lands will be managed under "permanent forestry" under supervision of the N. Y. S. Conservation Department.

District 11 (headquarters in Lake George): A noteworthy example of immediate benefit to a woodland owner under the FPA is displayed on H. C. Tuttle's Top O' the World Farm, Lake George. He signed up 400 acres, part of which supports 300,000 b. f. of merchantable white pine. He was offered $8 per thousand stumpage for market timber scaled on the Vermont Rule. Instead, a portable mill was called in. Tuttle is using his farm labor and horses to cut and skid. Main benefit, however, is that about $24 profit is realized on the rough lumber—quite a difference from the original $8 offer.

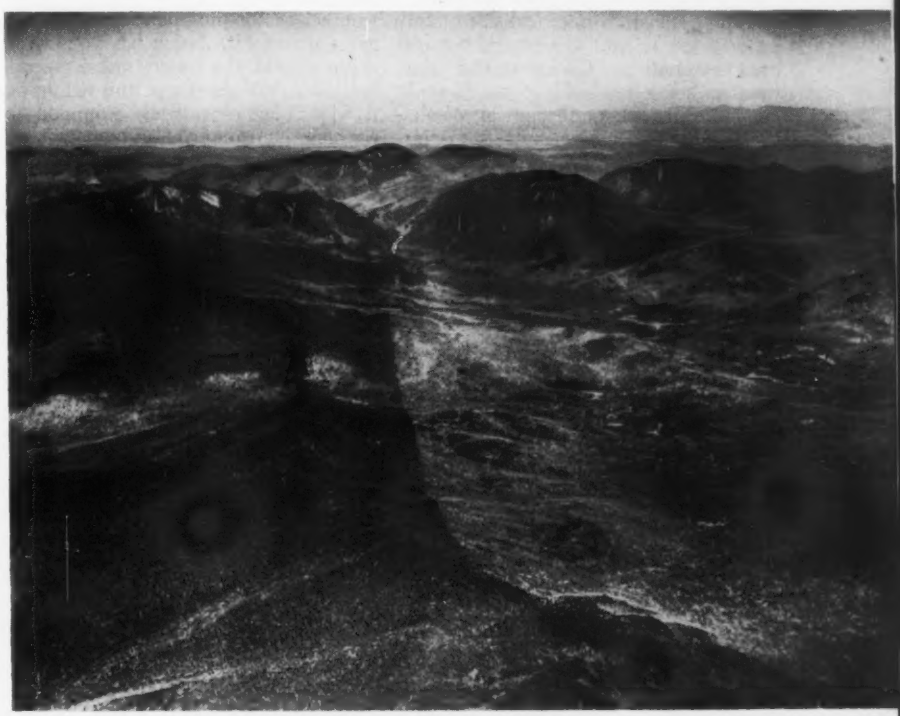
District 12 (headquarters in Catskill): The Forester demonstrated to a class of boys in grade school the use of forester's tools in the improvement of a hardwood pole-size stand. The meeting was part of a course on Conservation which is included in the curriculum of the school.

## POINT OF LAW

Mount Vernon's City Clerk George W. Rieger posed a new inquiry on the license law the other day.

The law says that if you've been a resident of the State for six months, you can buy a resident license; otherwise, you need a non-resident license. Mr. Rieger wanted to know if a citizen who has been a resident of this State for four months, and who has purchased a *non-resident* fishing license, would be required to buy a citizen *resident* license after he has resided another two months in the State in order to continue to fish during the remainder of the year.

The answer is No. The Department holds that the non-resident license, which he purchased prior to the time he was eligible to purchase a citizen resident license, will carry him through the remainder of the year.



## STATE LAND—PRIVATE LAND

*The above aerial photograph was taken from a point over the westerly end of the North River Mountains looking northeast toward Giant Mountain, and shows the line of demarcation between the State holdings of virgin timber on the southeastern slopes of North River Mountain and the lumbering operations of Finch, Pruyn and Company; this line is approximately at the point where the mixed hardwood and softwood ends and pure spruce begins.*

*The mountain in the center distance (whose top stands out against the line of Lake Champlain) is Giant. At the extreme right is the Macomb-Dix Range; to the left is the Nippletop-Dial-Noonmark Range.*

*Also shown are the Boreas Ponds on the right hand edge, Cheney Pond near the middle, and the Upper Ausable Lake, beyond which—between the Colvin Range and Sawteeth—is the Ausable Club and Keene Valley.*

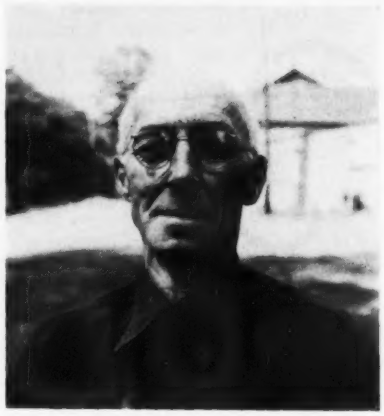
## LIFE ON A "LIGHTNING ROD"

Those 104 Fire Towers which the Department has perched on top of the highest peaks in the Adirondack and Catskill ranges, and on other upland timber areas, see a lot of lightning. But there's only one known case in which a bolt tangled with a tower. The ground about the legs of the tower was blackened; otherwise no damage was done.

Although no observer has ever been injured in his tower, most of them have suffered static shock at one time or another. But then—lightning is something Observers and Rangers have to contend with constantly. Often the places where telephone lines used to be strung on trees are found minus the lines, the trees minus some bark. Other 'phone lines have been found broken into small pieces or sections perforated with holes, or have been fused.

Experienced workers seem to "smell" the approach of an electrical storm and know when to quit the tower, but on one occasion an Observer had the wooden box on which he was seated knocked out from under him by a bolt. Usually the men move away from the metal work of the tower and stay in the middle of the wooden floor during a storm—or else they go down to their cabin. But things can happen there, too: One Observer found a leak in the roof of his cabin touched it with his finger, and got a dandy shock. Another Observer happened to be sleeping out a storm in his cabin, his bunk located beneath some shelving. A ball of fire entered on the telephone line, ripped along the shelving, shattered and fused nails, went out through a window, traveled along a wire clothesline to a tree, went down the tree and ploughed a deep furrow in the ground, moving hundred-pound boulders with ease.

But by and large, the lightning arresters and switches that can be thrown in the event of electrical storms seem to keep the lightning from doing much damage other than knocking out the communication lines, but to the Observers and Rangers that in itself is more of a nuisance than worrying over whether or not the "lightning rod" will get a direct hit. None has yet. Even if one should, the tower (metal topped, half glass, half sheetiron, and sitting on its four legs) is well grounded—a veritable lightning rod.



## A RANGER RETIRES

John W. Chase, a Department Ranger for 19 years and an active conservationist for at least 40, has retired. But he will leave his mark on Otsego County; he's been planting trees there for 38 years, and they're doing fine.

The Department has lots of good men retiring every year, but John Chase seems worthy of special notice because of the way he tied in conservation with a lot of other community activities. As a farmer and committeeman in the Farm Bureau; as Deputy State Master of the Grange, as member of the Schenevus School Board, as Town Supervisor, as one of the organizers of the now flourishing Otsego County Forest system—at one time or another, in one capacity or another, he has done a lot to establish the proper relationship between conservation and his community.

We doubt if his retirement means that he's giving up this sort of thing.

## SURE IT'S JONES BEACH

*Director James Evans, of this Department's Division of Parks, thinks the above photograph may serve as a useful reminder that Jones Beach, with all its recreational facilities, is right now going full blast. Judging by attendance, however, hot weather is the only reminder needed by most city dwellers.*

## ECONOMICS OF CONSERVATION

*This is a paper written for Paul Lemon, Instructor of Conservation at Albany State Teachers' College, by one of his students, Robert A. Van Atta. We feel that many professional conservationists have written more on the subject without saying as much.*

Some people believe that conservation in the forest industries is not economically practical. The purpose of this paper is to prove that owning thrifty forest lands can be a sound investment.

Five years ago I purchased 75 acres of land. The land is definitely broken into three phases of productivity. The lower part of the tract is swampy with little productivity. Above this swamp lies the main portion of timber. It includes about 25 acres of mature and nearly mature trees. Above this lies about 30 acres of cut over shrub lot.

The land is near good roads and markets.

To a certain extent conservation has been practiced. Soon after purchasing the lot I removed 56,000 feet. Only the mature and diseased trees were cut. Soon afterward I enrolled the piece under the Forest Practice Act. A State Forester spent almost a full day checking the woods. He computed the growth of different trees in all sections of the woods and marked 12,000 feet as being ready to be removed.

The State Forester informed me that the middle section from which the mature trees had been removed was growing at the rate of about 200 feet per acre per year. This growth is fairly rapid. The reason he gave was that most of the trees are hemlock which in good soil may grow from one-quarter to one-half inch in diameter in one year.

On the upper part where most of the trees are from six to twelve inches in diameter the growth is quite slow—approximately 150 feet per acre.

Using the figures set forth by the Forester, it is possible to figure the annual return on my investment. The explanation of finances involved follows:

| | |
|---|---|
| Original cost ..... | $1,700.00 |
| Timber sold (56,000 feet at $18 per M) ..... | 1,008.00 |
| *Total Investment* .. | $ 692.00 |
| Increment growth return (9,500 feet at $15 per M) ..... | $ 142.50 |
| Taxes (one year) ..... | 28.00 |
| *Annual Return* | $ 114.50 |

The price of fifteen dollars per thousand is conservative at present for timber in New York State.

From my experience I would suggest that quality of soil, types of trees and availability of markets are the most important factors in buying forest lands for investment.

## STOCK COTTONTAILS?

During the winter of 1948-49 experimental releases were made of cottontail rabbits imported from Missouri as a means of learning more about the effectiveness of such stocking during the open season.

Between November 16 and January 6 a total of 4,438 such rabbits were released on ten areas totaling 17,010 acres. Each area, with three exceptions, received more than 500 animals. The rabbits received were of high quality.

The areas used comprised good rabbit cover and were located near large centers of population in an effort to assure a high degree of hunting pressure. All rabbits released were ear-tagged and an effort was made to obtain all possible records of hunters taking such animals. In addition, box-trapping was also done by project personnel at the beginning of the breeding season to obtain an estimate of the number that had survived to that time.

The data indicated that a little more than eight per cent of the rabbits released were shot by hunters during the open season. Also indicated was the fact that approximately 13 per cent survived to the breeding season. Because of the high quality of the stock used in this experiment and the unusually mild weather throughout the particular winter involved, 20 per cent appears to be a liberal estimate of the proportion of imported cottontails released during the open season that may be expected to provide hunting during that season or to survive to breed.

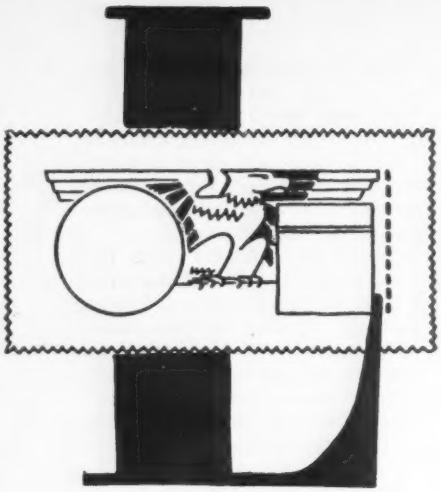
In this experiment, the number of rabbits which provided targets for the hunters or survived as breeders represented a density of 5.6 per 100 acres. To provide a 20 per cent return, it would have been necessary to release 28 rabbits per 100 acres. At the price paid this year ($1.48 each), the cost per 100 acres would be $41.44. Yet, there is no evidence that, on the study areas used, this degree of stocking resulted in any substantial improvement in hunting. In fact, even though the level of the rabbit population on these areas before the stocking was done was considered low, there were twice as many native rabbits as imported ones at the time of the breeding season.

From the Department's game take records from 1939 to 1946 it is inferred that, in a poor rabbit year, an increase in the "kills" of about 200,000 rabbits might constitute good hunting. Based on the 8.6 per cent rate of return to hunters, to make up this difference in kill by liberating imported rabbits would mean the purchase of 2,468,314 rabbits at a cost of more than $3,000,000. Even if the rate of return were doubled, an increase in the "kill" of only 10 per cent during a poor hunting year would necessitate the purchase of over 200,000 rabbits with an outlay of nearly $300,000.

From the findings of this study it is concluded that the importation and release of cottontail rabbits during the open season is neither effective nor economical as a means of providing better hunting so long as some native rabbits are present.

**DUTCHESS COUNTY CONSERVATION**

*This photograph is of the Chauncey Stillman farm in Dutchess County, where conservation is a byword. Among the practices shown are contour strip cropping, shrub planting in fence rows, farm pond construction, diversion ditching, reforestation, fencing of woodlots, and pasture improvement.*



# Letters to the editor

### CONSERVATION FUND

Dear Editor: Am I correct in assuming that the monies spent for erecting and maintaining ski lifts and slopes and other facilities of that nature come from funds derived from the sale of fishing and hunting licenses—and if so wouldn't it be fair to let the people who enjoy these sports contribute something to their upkeep?

Jerry Scoones, Buffalo

● *On the back of my license, it is printed: "The money you paid for this license goes by law to the Conservation (Fish and Game) Fund, to be used only for fish and game work in this State." What does it say on your license? —Editor*

### NESSMUK

Dear Editor: Many thanks to *The Conservationist* and to Mr. J. B. Ehrhardt for his description of Nessmuk's equipment. We would like to take exception, however, to his claim that Nessmuk was a Philadelphian. The most part of his life (when he visited civilization) was spent around the little village of Wellsboro, Pennsylvania. Many of his works were published in Philadelphia.

The rest of Mr. Ehrhardt's remarks and observations are well chosen.

Gerald D. Cook, Corning

Dear Editor: I was interested in the article by Mr. Ehrhardt on the Nessmuk Canoe. I had a 14 ft. guide boat about forty years ago that weighed 45 pounds, and which I used for long trips. It carried two men and plenty of equipment. I believe it is now in use on Big Tupper Lake.

Thomas S. Constantine, Katonah

### BUGS

Dear Sir: Mr. Donald L. Collins is absolutely right when he says, (June-July *Conservationist*), "Many persons find themselves not minding the pests so much when they know a little more about them." He earns still higher status as a sage by observing that the subject of insects can be deadly serious, because bugs nearly ruined my long-awaited vacation last May.

In fact I became so panicky at what could happen to me should I be bitten by a tick that I completely forgot to turn for advice to *The Conservationist*, to which I subscribe, and mailed a live specimen to the American Museum of Natural History in New York City. Mr. Willis J. Gertsch, Associate Curator of the Spiders and Insects Department, in a long letter propounded substantially the same information as did Mr. Collins. It is obvious that the dog tick is a miserable beast, but not such a fearsome one after all.

Now I can look a tick in the eye without getting ready to write my will. Knowledge, indeed is power.

Paul J. Kors, Brooklyn

### CHECK-OFF LIST

Dear Sir: May a mere woman offer an addition to your foolproof "Vacation Checkoff List?" And I'd put it down in very large print: TOILET PAPER!

Mrs. Gordon C. Mosher, Rochester

● *Yes, yes. Honestly, we had it on there, but it rolled off at the press.—Editor*

Dear Editor: And how about a small can of oil, and a stone for sharpening knives and axes? Tools get rusty and dull on a camping trip.

Philip Malloy, New York City

### ORCHIDS FROM BRAZIL

Dear Sir: Your magazine, I feel, is really outstanding. My husband, who is not from New York State, and I read it with great interest. The articles are well-written and informative and the pictures are superb. Your magazine is really the best of the professional type that we have ever seen—and that includes the Foreign Service Journal, which we find dull by comparison with *The Conservationist*. We keep the issues for reference and for our small daughter's education, far from home.

Mrs. Donald S. King, American Embassy, Rio de Janeiro, Brazil

### FISH AND/OR FLOWER

Dear Sirs: Why not print the fish plate on the back page and the flower plate on the inside back cover? Then we *ladies* could frame some of them.

Mrs. H. E. George, Andes

● *Sorry, but we can afford four colors only on our outside covers.—Editor*

### BOBCATS

Dear Editor: Enclosed you will find a picture of four bobcats that my partner and I caught while trapping beaver in Franklin County this past season. All were caught within a radius of five miles of where we were working.

Ernest Prichard, Dickinson Ctr.

● *A family, apparently.—Editor*

## LIQUID ASSETS

Gentlemen: If available, I should like to receive ten reprints of Mr. Cecil Heacox's article "Liquid Assets" published in the June-July, 1950, issue of *The Conservationist*. We are faced with many of the same problems in connection with water demands for the City of Denver and other municipalities and found the article particularly timely and informative. Your Conservation Department is to be complimented for the progress being made in developing multiple-use plans for important watershed areas.

Ralph A. Schmidt,
U. S. Dept. of the Interior,
Denver, Colorado

Dear Editor: Perhaps your Dr. Heacox won't be offended if I call to his attention an error, small but none the less factual, on page 8 of the June-July issue. In his very excellent and interesting article, "Liquid Assets", occurs this erroneous statement: ". . . . like the bacteria Bacillus coli, cause disease in humans. . . ." The colon bacillus does not cause disease in humans when ingested from a water supply. Everyone, excepting the very youngest of nursing infants, harbors countless billions of them in the colon (hence the name of the organism) throughout life, and obviously the ingestion of a paltry thousand or so more would do no harm. The objection to the presence of colon bacilli in drinking water lies in the fact that they indicate a more or less recent pollution with fecal material and hence are likely to be accompanied by typhoid and/or dysentery bacilli, which are distinctly disease-causing in humans. In other words, colon bacilli are not dangerous of themselves, but do have dangerous associates.

No doubt Heacox knows this himself, but because he is a very busy man just overlooked this misstatement.

Henry N. Jones,
Cloyne, Ontario, Canada

## GINGKO

Dear Editor: Your article entitled "On Borrowed Time, The Story of Three Trees That Should Be Extinct, But Aren't", called to my attention a tree growing upon the lot which I recently purchased in Hoosick Falls. Prior to reading the article I had only casually examined the tree, taking it for granted that it was some type of poplar. I am enclosing a few leaves taken from the tree this morning which cause me to believe that it is definitely a gingko tree.

I have not measured it, but I judge that it has a diameter of from two to three feet at the base. I will sincerely appreciate your efforts to identify the enclosed leaves, and am also wondering how old the tree may be.

John S. Davidson, Hoosick Falls

● *A gingko for sure, probably 75 or more years old.—Editor*

## PIKE IN OSWEGATCHIE

Gentlemen: I recently learned from Warden Salisbury of Cranberry Lake and from several other apparently reliable sources that pike have worked their way up to "The Basin" on the East Branch of the Oswegatchie River. If true, the presence of pike so far up this stream is discouraging indeed and I fear will just about doom the trout fishing in what was heretofore one of the finest stretches of trout water in the State—from Cranberry Lake outlet dam down to the old Hardwood Dam, some four or five miles below. The folly of blowing out the old Hardwood Dam some years ago "to permit the big brownies below to work upstream"—over the objections of the local sportsmen's organization—appears to be indicative of some poor judgment on the part of the official or officials responsible for ordering this done, inasmuch as the presence of pike in goodly numbers below Hardwood Dam was a well-known fact for years. Old Hardwood Dam served as a barrier to the pike working their way up-stream.

It is understood that at the time, the Conservation Department took the stand that riffs, rapids and shallow water would arrest the progress of pike attempting to work their way upstream above Hardwood. This is difficult to believe, inasmuch as it is common knowledge that pike are able to (and do) buck the swiftest current, and many thousands are hooked in fast water every year. What do you think?

M. E. Grout, Brooklyn

● *We think (a) that this Department had nothing to do with the removal of the dam in question; (b) that pike have been firmly established in Chaumont Pond for years, and that it would be just about impossible to prevent them from entering the east branch of the Oswegatchie from that source; (c) that the pike in the river fortunately don't seem to be increasing; (d) that pike can, and do, navigate and even live in rapids.—Editor*

## LOON

Dear Sirs: I am enclosing some snapshots of a duck we found resting on the river banks of the Seneca early this Spring around May 1, and haven't been able to identify him. It seemed very tired, as we were able to get within three or four feet of him for the snapshots. However, it did swim away and we watched him swimming about until dark. The next day he had disappeared. He was black and white in color. Can you help us identify him?

Mrs. Korleen B. Williams, Baldwinsville

● *Positively a loon, probably injured or poisoned in some way.—Editor*

## OWASCO CISCO

Dear Editor: From all the information I can gather, the ciscos in Owasco Lake were put there by the Conservation Department—primarily as food for lake trout. They have grown considerably the past few years, making wonderful fly fishing during the eelfly hatch and becoming more popular each season and more widely known. During this season's fly hatch we would estimate the average cisco at 1 and one-half to two pounds, and a very game fighter.

However, it seems no person can say where the cisco originally comes from. How about straightening us out on that?

Frank F. Fara, Auburn

● *Owasco Lake has two forms (subspecies or possibly full species) of cisco. One small one which is native and one large one which has been introduced from bays of Lake Ontario by this Department. The latter species grows much faster and attains a weight of from two to three pounds; it is the cisco you refer to.—Editor*

## CONQUEST

Dear Sir: The main reason for this letter to you lies in the fact that this copy of *The Conservationist* has come addressed to me at Overbrook, Philadelphia 31, *New York*. Apparently the Post Office has conceded that the Empire State has taken over the Commonwealth of Pennsylvania, or else merely the City of Brotherly Love. Why worry about Korea when such cataclysmic conquests take place under our noses and we do not realize it until we are confronted by a *fait accompli*?

Greville Haslam, Headmaster,
Episcopal Academy, Philadelphia

## RECORD HEAD

Dear Sir: Referring to the deer head on page 32, *Conservationist* for June-July. Is it not the rule that bucks run either to horn or haunch, seldom to both?

George L. Harrison, St. Davids, Pennsylvania

● *Maybe, but over our desk hangs an exception to that rule. It is a head which until recently ranked tenth on the State list, and it used to be carried by a buck that had a duly attested live weight of 388 pounds (heaviest on record in this State).—Editor*

## TEN PER CENT RULE

Dear Sir: Some of my good friends in the Torrey Botanical Club have what they call the Ten Per Cent Rule about wild flowers; that is, they do not pick more than ten per cent of the blossoms in any one area or collect more than ten per cent of the plants. Of course, where plants are abundant, this has little significance, but it does serve to prohibit any picking or collecting where there are less than ten of any one specimen.

Daniel Smiley, Jr., Mohonk Lake

## SUFFOLK DEER SEASON?

Dear Sirs: I would like to go on record as being in favor of a deer season in Suffolk County, perhaps only bow and arrow, but it would give a lot of us week-end hunters a chance near home.

*J. Whitaker, Bethpage*

## THANKS

Dear Editor: I have been seeking an opportunity to tell you what a wonderful job I think you are doing with your bi-monthly issue. You give me that chance on Page 1 of the new June-July issue.

*The Conservationist* is an ideal publication. It does sell the Department, sells itself and gives many would-be out-of-door folks a genuine glimpse of what they are missing. No magazine I read is so full of interest as yours.

Clarke A. Sanford, Publisher,
The Catskill Mountain News

Dear Sir: Although this is my first subscription, I have actually read two years' issues of *The Conservationist*. Last summer I spent a two-weeks' vacation during August on the upper Esopus. The drought had made the fishing so poor that I had plenty of time on my hands. It so happened that the gentleman with whom I was staying, the president of the Upper Esopus Fish and Game Assoc., had all these back copies lying about. I picked up one out of curiosity and believe me, I didn't stop until I had gone right clean through every one of them.

You certainly give a great dollar's worth in these highly inflated times.

Jacob Hutner, Flushing

## SMELT

Dear Editor: Thirty-five years ago I used to have the time of my life spearing suckers and bullheads in numerous streams flowing into the south waters of Lake Ontario. We, as kids, would quit for the night only when our bran sacks were as heavy as we could drag home. But for many years now, my business has kept me away from this section of Wayne and Monroe counties.

Last spring I drove to my old home town for a visit, and shortly after my arrival the door bell rang and there stood my old boyhood pal. "The creeks are full of fish," he said. "Smelt." I was hard to convince, for never in my memory was a smelt caught or even seen in any stream flowing into southern Ontario. But there was a big run on, all right. The silvery fish were smelt too—the same kind I had caught in Lake Champlain. In about three hours we had all we needed.

I was amazed, and still am. Where did the smelt come from? This was the first year anyone had seen or caught any in local streams.

G. I. Tinklepaugh, Poughkeepsie

● *Most smelt in the Great Lakes appear to have originated from a planting in Crystal Lake, Michigan, in 1912. They were first recorded in Lake Michigan in 1922; our first record for Lake Ontario is October 9, 1929. Since then smelt have gradually increased, with spawning runs in more and more streams, until, during the last few years, they have become fairly common.—Editor*

## HAWKS AND OWLS

Dear Editor: I think most people in the conservation field feel that to leave one hawk or owl unprotected is to leave an open season on all of them, as far as 80 per cent of the hunters are concerned. This I'm afraid is the realistic picture, legal or not. Indeed, it takes a bird-lover many years to make snap identifications of the great horned and barred owl—and this without that hunter's urge to shoot.

Donald J. Gamble, Schenectady

● *As of now, the only hawks and owls not protected in this State are the sharp-shinned, Cooper's and goshawk, and the great horned owl. (Incidentally, through a printer's error, the Cooper's hawk was omitted from the unprotected list in the 1950 Fish and Game syllabus.) As to identification, a mistake is punishable by law if it results in a hunter killing the wrong species—which ought to curb "that hunter's urge to shoot."—Editor*

## TROUTING HINT

Dear Editor: Here's a hint for other trout fishermen: Keep a few facial tissues in your tackle box to dry your dry flies with. One may be used many times, absorbing water from your flies after making a catch, or after making repeated casts. They are easily disposed of, as well as being most economical. I use them all the time, preferring one to a piece of chamois.

Ruth A. Tompkins, Shinhopple

## SNAKE

Gentlemen: I am wondering if I killed a water moccasin in a small brook at Pawling, New York. It was a good two and one-half feet long, flat v-shaped head, heavy body, and color of back when dry was a very dark blackish grey. If it were wet, I am sure it would look black. The underside was roughly, red, yellow and orange squares. When the snake opened its mouth it was a white or very light yellow color.

Kenneth S. Noyes, Scarsdale

● *Sounds like a harmless water snake. There are no poisonous water moccasins north of the Mason-Dixon Line.—Editor*

## PUFFBALL

Dear Editor: A friend informs me that puffballs are good to eat. Is that true, and if so, where might they be found?

Chauncey Peckham, Syracuse

● *The accompany photograph shows a puffball, a type of fungus, some of which discharge ripe spores in a smokelike cloud when struck. This one happens to be of the edible kind; it was delicious when sliced and fried in butter-and-egg batter, and tasted like egg plant. They grow even larger than the one in the photograph, which measured 26 inches in diameter. They're found in damp places, usually around old tree stumps.—Mrs. R. B. Miller*

## WOODCHIPPER

Dear Editor: The article on wood chips on page 35 of the June-July issue ends with the hope that a lighter, portable machine may be developed. It has been.

Not too many issues back, *American Forests*, published by the American Forestry Assn., carried an article on it. If my recollection is correct the first model was assembled by the forester of the Providence R. I. Water Dept. (watershed area) who wanted an answer to the fire hazard of brush, etc. after thinning operations. The resultant chips were first used as a mulch in the woodlands (left where they lay), acting to slow up water run off. Later, markets were found on farms etc. for the chips.

Robert P. Jonas, Seacliff, L. I.

● *As you say, it is a fact that portable woodchippers have been developed and perhaps we should have made that clear in the article. The one which you saw described in American Forests magazine (May 1949) and which was used on the Scituate watershed near Providence, Rhode Island, was a "Fitchburg chipper" manufactured by the Fitchburg (Mass.) Engineering Corp. We know of two other concerns who make chippers: The Carthage Machine Co. at Carthage, N. Y. and the Asplundh Chipper Co., Jenkintown, Pa. All of these portable chippers have great possibilities but are at the present time priced a bit high for the average farm owner.—Editor*

## CAMPSITE

Dear Editor: We received your circular on Lake George and decided to take my family up for a week. We arrived on July 1 at 10:00 a.m. The No Vacancy sign was out, but we stopped anyway to rest at Hearth Stone Point Campsite and after looking around we found room to park our trailer on site No. 21, where six boys were camped for three days. (We stayed a week.) It is the most beautiful campsite I have visited yet. In front of the campsite I found the best Lake Trout fishing I have had in years—better than in Seneca and Keuka Lakes. That was quite a surprise. Wish the Bass season had been open.

Would like to tell you more. Am planning on going back next year.

Russell Snyder, Penn Yan

● *Tell us more.—Editor*

## PILEATED WOODPECKERS

Dear Editor: Can you tell me whether or not pileated woodpeckers really cause a great deal of damage? A friend who says they do wants to kill them. I suppose this is illegal.

Katharine B. Townsend, DeRuyter

● *Better tell your friend to leave them alone. The pileated woodpecker is a most interesting, beautiful and fairly uncommon bird, and he destroys a great quantity of harmful insects, particularly the hemlock borer (see June-July Conservationist). Besides which he's protected, of course.—Editor*

## MINOR HUNTING

Dear Editor: Will you please tell me if a boy of 14 with a hunting license may hunt accompanied by any adult with a license, or must he hunt only with his parent?

Richard Lowerve, Middletown

● *With parent or legal guardian, or with a licensed hunter over 21 years of age, duly authorized by parent or guardian. But not for deer or bear.—Editor*

### RETRIEVERS

Dear Editor: Last fall I heard of two young hunters who went out to shoot ducks in a small swamp near home and took along their Chesapeake Bay retriever. They were late and others had been shooting there ahead of them, but they settled down to wait.

The dog was restless so they let her nose about a bit, and in a few minutes she came back with a crippled duck. So they sent her out again. This was repeated until the boys had in their possession all the ducks they should have, and hadn't fired a shot.

For men who like to shoot it would have been an unhappy experience, but what does it tell about the need for more retrieving dogs for the sake of Conservation?

Mrs. Charles Yerger, Bath

● *It tells a lot.—Editor*

### BACK ISSUES WANTED

Dear Sir: I am writing to inquire if you can tell me where I can buy back issues of *The Conservationist*. I need volume one, numbers 1, 2, and 6. I will pay no less than five dollars each for these three magazines if they are in good condition. I have had no success with newspaper ads.

Edith E. Potter, Route 2, Andover, N. Y.

Dear Editor: I'd like you to publicize, if you will, that I want to get a copy of all the back issues to complete the set of *The Conservationist*. I trust this is not a presumption on my part.

Emanual Rabins, New York City

### DOGS AT LARGE

Dear Editor: Has a person any right to let a hunting dog run at large after the hunting season is closed? Without being accompanied by its owner?

Fred Omphalius, Eden

● *"Except on lands actually farmed or cultivated by the owner or tenant thereof, no owner shall allow his dog to run at large in fields or woods inhabited by deer outside the limits of any city or village."—Section 195, Conservation Law.—Editor*

### PETS

Dear Editor: I would like to obtain a sparrowhawk for a pet. I would appreciate any information you could give me on how to obtain one.

Alan Hoffman, Glens Falls

● *Sorry, we can't help you out. But we'd like to take this opportunity to say, again, that in order to take any protected animal or bird from the wild and keep it in captivity requires a permit from this Department. That goes for everything from sparrowhawks to 'coons to baby deer.—Editor*

### ALASKAN NOTE

Dear Sirs: New York State has a lot of scenery it is true, but so has Alaska. The way we live you couldn't call us pioneers, but life is freer up here.

We gill net salmon (King or Chinook) in the summer and quick freeze them for our winter's food. We eat a large amount of fish. We also get Cheet or Shee or Inconu, as they are called in different areas. Thus far 25# has been our largest and 44# for a King Salmon. We use a 9-inch mesh gill net.

There is one matter in which I am sure we have your State beat. That is mosquitoes—both in size and number. Our vegetables seem to grow larger too, especially the cauliflower and cabbage.

We received a copy of your magazine from our father and wish to subscribe for five years.

Mrs. Arthur S. Farrance, McGrath, Alaska

***Photograph taken in the wild by Edward Fisher, Medina***

### TO EXTERMINATE?

Dear Editor: Are there any species of bird, animal, or fish life that you consider useless or detrimental to the point where they should be exterminated? Or do you think there is a place for everything, within limits?

C. W. Richwine, Rome

● *A place for everything, within limits.—Editor*

### BOUNTIES

Dear Editor: What animals in New York State can you receive bounty on, and what is the price received on them?

John Yonke, New York City

● *The State does not pay a bounty on any species; a few counties pay varying amounts on some animals.—Editor*

### WILLING TO WORK?

Dear Sirs: I wish to congratulate you on the publication of *The Conservationist*. It is getting better all the time. Tell us how us sportsmen can lend a hand and help your programs—we are a good bunch and willing to help.

Carl F. Brown, Plainfield, New Jersey

● *Thanks; that's the kind of co-operation that's most needed. We try to include in each issue at least one or two articles containing concrete, practical suggestions for individuals or groups interested in doing real conservation work. We have reprints of these articles available.—Editor*

### SUMMER GUNS

Dear Sir: Could you tell me if it is legal to take a shotgun or a .22 pistol into the Adirondack Park during the summer? We would use them for plinking and occasional varmints.

Jim Ryan, Schenectady

● *OK, if you have a pistol permit and a hunting license.—Editor*

### LOST AND FOUND

Dear Sir: Read your article on "Lost Hunters" (April-May issue). Here is a sure-fire way to get found. Walk downhill, never up. Find a brook and follow it downstream, not up. You are bound to find a camp or farm soon. A gully will do on a pinch.

Dr. Karl A. Parshall, Brooklyn

### ZIP

Dear Sir: Am having a lot of trouble with deer browsing my place in Putnam County. Didn't I read something about a deer repellent in *The Conservationist*? Could you tell me what it was and where it is available?

Edward G. Comstock, Bronxville

●*Goodrite ZIP. Available at some hardware stores and at most GLF co-operatives.—Editor*

### PHOTO CREDITS

First cover, pages 2, 3, 6, 7, 14, 15, 18, P. W. Fosburgh; second cover, Seneca Ray Stoddard; 4, P. W. Fosburgh, A. L. McDowell; 8, 9, 30, 31, Fred Chambers; 10, L. A. Burckmyer, Jr.; 13, U. S. Fish and Wildlife Service; 19, 26, 27, 33, Doug Finch, (pilot for aerials, Fred McLane); 32, Earl McGuirk; 35, Art Cook; fourth cover, Homer D. House.

# OUR SHARPEST OPERATOR

MOST wild animal cartoons apparently are based on the kangaroo, the skunk or the porcupine.

The kangaroo is kinda hard to draw on account of you've got to make Jr. fit in there too.

The skunk is much easier.

But porky is duck soup.

You'll find it much more difficult to draw porky's individual quills. In fact you'll probably need pliers.

Nature has a lot of fun fiddling with hair. Sometimes it's stiff and leathery —like a walrus' whiskers. Sometimes it's exceedingly soft—like the pelt of the female sable, the mole, the flying squirrel, the curls of Little Eva in the moonlight. Sometimes it's coarse like a horse's tail, a moose's mane or the stuff in old couches.

Most animals simply use their hair without much modification as insulation against cold or water. Others use it to swat flies or as radar antennae. But of all hair, the hirsute hiatus of the porcupine literally presents the prize-winning entry. Nature went all out on this one, modifying several thousand of our subject's hairs into highly developed quills. These are fastened so wondrously to the owner's hide that they pull out at the slightest touch, provided the porky *wants* them to pull out. The end of each quill is ringed with microscopic barbs. Once the points become imbedded in the victim's flesh they constantly work deeper. Broken off in a man's thumb, a quill may emerge, months later, from the shoulder or even from the sole of the foot!

The porcupine's quills are among the most cruel of all natural defense mechanisms. When a skunk uncorks, the discomfort can be bathed away in the nearest brook. When a constricting snake tightens its thumbscrews, the breathless moment usually is not long delayed. When a cat bites or a falcon strikes, it won't be long. But when a porcupine lashes its stubby tail and drives those barbed spears into the victim's mouth or eyes, the torment may endure for days until the agonized creature, unable to see or close its swollen mouth, starves.

The fisher seems to be about the only animal (outside the tape-worm) that can attack a porcupine and get away with it. Virtually every Adirondack fisher pelt discloses quills, sometimes scores of them, harmlessly embedded in the skin, most of them apparently having journeyed there from distant anatomical points.

So persistently does the fisher hunt the quill pig that the unlovely critters are now absent in many Adirondack areas. So the fisher becomes of substantial economic importance other than as a furbearer. The many porcupines he eats otherwise might (and probably would) destroy thousands of valuable forest trees, mainly by girdling.

Nature has fitted porky for an arboreal existence. The soles of its ample feet look like over-magnified black sandpaper. The claws are very long, curved and sharp—like the talons of a hawk. It has no trouble climbing, although the operation is ponderous, because Nature has rigged the legs of our hero for easy straddling; he can sit high in a spruce for a week without requiring an alcohol rub.

All this time you can be sure our subject is operating on the tree. Foresters have found that the porcupine has a method in his debarking operations. He often merely scars the tree, leaves it, then revisits the peeled place months later, apparently to sup fibers above the scar which, acting as a dam, has enriched the adjacent wood with far greater food content.

The porcupine seems to have a decided preference for hemlock, unless an apple orchard is handy. But he doesn't stop at trees. It's not uncommon to see him slowly paddling among the lily pads in some mountain pond, nibbling a stem or leaf and even ducking for the more ample roots.

Several of New York's Forest Rangers once had to rig ingenious miniature electric fences around automobiles they parked in porky country. The critters ate the synthetic tires.

Unfortunately, the porcupine likes its meals seasoned. Anything bearing the slightest trace of salt has a hard time in country where the wasteful whittler works. The passing of many a fine old covered bridge, tinctured by the passing of horses or a dalmatian or two, can be blamed directly on porcupines. Abandoned Adirondack and Catskill lumber camps usually follow a specific pattern of disintegration. Since porky is the original Knight of the Privy Seal, the smallest of the normal scattering of camp outbuildings goes first. Then go the horse barn and the kitchen.

Campers often forget to guard against porky penchants. Never will we forget the time, years ago, when porcupines in one night ate most of a sweat-flavored axe helve, the handles of nearly all the canoe paddles, the bottoms of all the aluminum pots and a foot-wide hole in one canoe where a bag of salt pork had been lashed. That was a serious loss.

Porcupines have a low reproductive capacity. That is all right with us. Usually they have only one little jerk per year—four months after breeding. This little jerk is both oversize (often more than a pound at birth) and precocious. It's as homely as sin. It doesn't improve with age. Only for about an hour is the newborn quill pig a soft touch. After that the quills quickly harden and the thing is ready to put the prickly heat on any enemy. It's a laugh to see an hour-old piglet pivoting like mad to keep its lashing little tail toward a probing human foot. Incidentally, porkies don't *shoot* their quills —they have to attach 'em by direct contact.

A few hours after birth this infant terrible begins to nose around for a snack of salad. From there out it rivals the beaver as a vegetarian.

IT is common belief that porcupines never should be destroyed. After all, goes the story, his prickly majesty is the only critter a lost person could easily lay hands on for food. The answer to this is baloney. Porcupines often do enormous damage to forests and to buildings. Furthermore, one doesn't eat a porcupine easily. Despite a general appearance of delectable rotundity, the hind legs are about the only meaty portion. Skin and cook like chicken. Sometimes it is necessary to simmer a dainty bit carved from a thirty-pound carcass of an old boar bristle-pig for several days. It often is delicious, especially when flavored with some fine old covered bridge. —CLAYT SEAGEARS

By Clayt Seagears

WANTON WHITTLER

THE PORCUPINE

**PICKEREL WEED**
***Pontederia cordata***
*(See page 14)*

*Courtesy N. Y. State Museum*